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ABSTRACT

This study attempted to determine if the Judeo-Christian tradition, when part of an individual's religious background and when incorporated into school philosophy, influenced the level of decision-making of high school seniors (N=130) in sociomoral and environmental issues. Subjects, attending four public and private schools in the Columbus (Ohio) area, completed three instruments (included in appendices): (1) Defining Issues Test (DIT), measuring a preference for a particular mode of reasoning in moral issues (based on Kohlberg's moral dilemma series); (2) Environmental Issues Test (EIT), measuring thought patterns and processes using dilemmas set in an environmental rather than general social context; and (3) Student Survey, measuring demographic background information, including educational and religious background. Statistical analysis indicated no significant difference between the level of sociomoral development between public (N=78) and private (N=52) school students. Public school seniors scored significantly higher in environmental-related issues. Religious involvement did not correlate significantly with DIT or EIT. Regression analysis showed EIT P score, science courses, and religious affiliation as significant predictors of DIT P score. Significant predictors of EIT P score were DIT P score, public school attendance, religious affiliation, and female sex. Implications and recommendations are included. (Author/JN)

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THE INFLUENCE OF
RELIGIOUS BACKGROUND AND SCHOOL PHILOSOPHY
ON MORAL REASONING IN
SELECTED COLUMBUS HIGH SCHOOL SENIORS

THESIS

Presented in Partial Fulfillment of the
Requirements for the Degree Master of Science

By

Deborah Louise Bainer, B.S.

* * * * *

The Ohio State University

1982

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To Mom and Dad,

for the encouragement you have given me to develop to my fullest potential, for the freedom to explore and question traditional values in nontraditional ways, and for the principles passed along to me by your consistent lives.

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I wish to express my sincere gratitude to those individuals who were instrumental to this study. Dr. Clinton Shepard, through his questioning and interaction, stimulated within me the development of processes of critical and abstract thinking from which this study grew. Dr. Kevin Ryan, through his outstanding classroom teaching, introduced me to and encouraged me in the field of moral development and education. Drs. Woodward Bousquet and Robert Townsend, through their hours of patient help with statistics and computer programs, enabled me not only to make sense of the results of the study, but also to comprehend its implications.

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And Jean Staten, through it all, remained my friend.

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CHAPTER I

Introduction

Orientation to the Problem

Throughout the history of this country, different values have dominated society at different times. In pre-colonial times, a personal survival ethic was an apparent necessity. Later, the work ethic, spawned by the belief that all men were of equal ability and therefore had an equal chance to succeed, reigned. The present technological society exhibits a growth ethic in which the economic and political spheres are of primary importance (Petulla, 1977).

Concurrent with this ethical evolution has been an undercurrent of environmental concern. Impetus for the unrest was initially provided by foreign visitors and settlers, scientists trained in Europe, and later naturalists and transcendentalists who had seen the result of resource mismanagement in Europe (Petulla, 1977).

Like most social movements, environmental concern has been cyclic. After seemingly irreparable setbacks, it has resurfaced regularly to the arena of popular and political action. Most recently, the last decade has witnessed the return of environmental concern.

In the late 1960s, the thrust was on assessment and cleanup of environmental damage. A realization of man's dependence on the ecosystem and the need to prevent its destruction resulted in extensive environmental regulations addressing environmental quality in the 1970s (USEPA, 1971). Governmental regulations have been waning in the 1980s due primarily to economic pressures. With deregulation, the responsibility for retaining environmental quality is being thrust onto the private sector and the citizenry.

Because an individual's values affect his perception of the environment and thus the nature of his decisions concerning environmental quality (Miles, 1977), researchers and philosophers have revitalized interest in understanding individual value systems and ethics. It has been recognized that the answer to directing individuals in making environmentally wise decisions lies not in the quantity of conservation education presented as much as in its content (Leopold, 1949). Because environmental quality is a social-moral issue as much as a scientific-technological one (Iozzi, 1978), environmental educators need to explore and apply ways of developing an "ecological conscience" in the nation's citizenry (Roth, 1980). Environmentalism in this decade must be more than a cognitive educational approach. It must encourage "bioethical development" and the formation of a life philosophy (Goldstein and Lockwood, 1980).

Yet values, attitudes and ethics are little understood, especially in relation to the environment. Dixon calls for special study of attitudes, values and ethics so that their maximal use can be applied to prevent and remedy ecological inharmonies and to initiate "just and creative" human activities in relation to the environment (Dixon, 1979).

A promising theory to explain the development of reasoning processes associated with social-moral decision-making has been proposed by Lawrence Kohlberg. His cognitive moral development model observes that, just as people develop cognitively and physically, they mature in their ability to make moral judgements (Iozzi, 1978). The development of moral judgement in an individual is not due to an accumulation of information, but to a change in the way of thinking.

Kohlberg has identified three major levels of moral judgement. The most basic level exhibits egocentric orientation and motives of self-preservation. The second level shifts to decisions revealing a respect for authority, peers and social order. Decisions on the highest Kohlbergian level are based on universal principles of justice and equality.

Iozzi (1978) suggests that the bulk of our environmental problems stem from the fact that environmentally-related decisions exhibit behaviors typical of Kohlberg's lower, self-interest stages. This has expended our surroundings and resources. If this is true, an understanding of factors that influence the progression of an individual from one Kohlbergian level to the next could be advantageously incorporated into environmental education strategies.

Upon finding references to Kohlbergian theory scarce in environmental education literature, Miles stated that, "the field is open for exploration of the potential of Kohlberg's theory as an environmental education tool" (Miles, 1977). Iozzi views the cognitive development approach as a potential basic framework for developing a highly effective environmental ethic which should result in more environmentally sound decision-making (Iozzi, 1978).

In the early applications of his theory, Kohlberg identified widely varying social, cultural and religious conditions that affect the rate at which an individual progresses through the states of development of social-moral decision-making (Hash, 1975). If the same variables influence the level of development when social-moral issues are in an environmental context, and if they affect development in the same way is open to question.

Two variables described by Kohlberg and of particular interest to this study are religious background and school atmosphere or philosophy. Kohlberg found no significant difference in the development of moral thinking among Catholics, Protestants, Jews, Buddhists, Moslems and athiests (Hash, 1975). Others, however have cited the Judeo-Christian tradition as the cause of the environmental crisis. The anthropocentric outlook and domineering attitude toward nature fostered by the Judeo-Christian tradition has, they say, led to detrimental environmental values and ethics (Leopold, 1949; McHarg, 1964; White, 1967; Berry, 1973; Nash, 1981).

Dubois (1973) and Monchief (1974) counter that Judeo-Christian teachings have often led to positive environmental effects. It is further intimated that the biblical concept of man's relation to the environment has been misinterpreted, and the vast ethical and conceptual resources of the Judeo-

Christian tradition are the proper base for the needed ecological ethic (Schaeffer, 1970; Zackre, 1973; Dobel, 1977; Ruether, 1978). A quantitative study of the influence of an individual's religious background on the development of environmental judgement and its valence is yet to be provided.

Closely linked to the variable of religious background is that of school atmosphere or philosophy. Kohlberg stressed the importance of the moral atmosphere in the classroom to the development of moral judgement in its students (Hersh, Miller and Fielding, 1980). Studies by Panowitsch (1974) support the link between attitude about conscious moral education in the classroom and its success. Panowitsch found that logic, art or religion courses added to the school curriculum do not cause change in the level of moral judgement of students. However, an integrated program focused on moral problem-solving or on effecting psychological development did cause a change in the level of moral judgement of students.

Ryan attributes this to the "value neutrality" of the public schools, where values are not clearly defined and shared. In alternate schools such as religion-based, humanistic education or Chinese government schools, values are clearly identified, shared and taught. Thus diverse classroom atmospheres exist between public and private schools (Ryan, 1981).

When considered in tandem with the aforementioned variable, then, private schools of the Judeo-Christian tradition may have an influence on the level of moral judgement and the degree of environmental judgement in a student. The issue is yet to be explored.

In days of decreasing availability of fiscal support and increased demand for accountability of schools in affective as well as cognitive areas of student development, the need exists for effective and useful classroom strategies to be identified (Roth, 1980). More specifically, the settings which best aid in forming environmental values need to be determined. More experimentation needs to be done to find strategies to develop environmental values in students of various ages and maturation levels (Knapp, 1980).

Statement of the Problem

This study seeks to investigate the question:

Does the Judeo-Christian tradition, when part of a student's background and when incorporated into the classroom philosophy, have an effect on the student's moral reasoning and decision-making in social and environmental issues?

This gives rise to the research questions:

Question 1: Do significant relationships exist between demographic, educational and religious variables in the student's background?

Question 2: Is there a significant difference in the principled moral reasoning in social and environmental issues between high school seniors in public and religion-based private schools?

Question 3: Is there a significant difference in principled moral reasoning on social and environmental issues between high school seniors who are religiously involved and those who are not?

Question 4: Are there significant predictors of the student's principled moral reasoning in social and environmental issues?

Question 5: Is moral development general or context specific?

Research Hypotheses to be Addressed

The following hypotheses will be examined during the study:

Hypothesis 1: The mean DIT P score for high school seniors attending private schools will be significantly higher ($p \leq .05$) than the mean DIT P score for students in public schools. That is, seniors in private schools will attribute more relative importance to principled moral considerations in general social issues than will seniors in public schools.

Hypothesis 2: The mean EIT P score for seniors attending private schools will be significantly higher ($p \leq .05$) than the mean EIT score for students in public schools. That is, private school seniors will attribute more relative importance to principled moral consideration in environmental issues than will seniors in public schools.

Hypothesis 3: There will be a significant ($p \leq .05$) positive correlation between religious involvement as measured by degree and years of involvement and religious affiliation, and P score on the DIT. That is, the greater the extent of a student's religious involvement, the more importance s/he will attribute to principled moral considerations in general social issues.

Hypothesis 4: There will be a significant ($p \leq .05$) positive correlation between religious involvement as measured by degree and years of involvement and religious affiliation, and P score on the EIT. That is, the greater the extent of a student's religious involvement, the more importance s/he will attribute to principled moral considerations in environmental issues.

Hypothesis 5: There will be a significant ($p \leq .05$), positive correlation between P scores on the DIT and EIT. That is, the more importance the student attributes to principled moral considerations in a general social context, the more importance s/he will attribute to principled moral considerations in a specific environmental context.

Hypothesis 6: There are significant ($p \leq .05$) predictors or combinations of predictors of DIT P score. including personal variables, educational background, religious background and P score on the EIT.

Hypothesis 7: There are significant ($p \leq .05$) predictors or combinations of predictors of EIT P score, including personal variables, educational background, religious background and P score on the DIT.

Definition of Terms

For the purposes of this study, the following definitions will be used:

Apocalypse.--An apocalypse is a prophetic revelation usually involving an impending cataclysm in which good triumphs over evil (Random House Dictionary, 1980).

Bibliocentric Curriculum.--A curriculum in which all subject matter is related to God is Bibliocentric. The curriculum begins with the Bible, which has the dual purpose of 1) providing content (truth) of its own, and 2) providing a basis of comparison for testing and evaluating claims to truth from other areas (Byrne, 1977:370).

Degree of Environmental Judgement.--The Degree of Environmental Judgement is the Kohlbergian level of development of moral judgement in a specific environmental context, i.e., the level into which at least 67 percent of an individual's responses indicating reasoning patterns fall when the individual is confronted with an environmental dilemma with inherent moral implications.

Deism.--Deism is the theology which denies the immanence of God in history, while holding to the transcendence of God above history. It follows that God is separate and not involved in the affairs of the world and man, and that belief in God is a result of reason and evidence in nature, not revelation (Byrne, 1977:369).

Divine Command Theory.--This fundamentalist theory holds that morality is ultimately defined by, or based on, divine command as revealed by the Bible or other sources of revelation (Kohlberg, 1981:311).

Ecology.--Ecology is the study of organisms and their interrelationships within the environment.

Environmental Ethic.--An environmental ethic is a system of thinking or way of life which exhibits a reverence and respect for all environments, natural and man-made (Iozzi, 1978:3).

Ethic.--An ethic is the system of how an individual rationally decides what is right and wrong. It is a system of thinking or rational skills used to define and establish an individual's values and morals (Ryan, 1981).

Ethical.--Character or conduct described as ethical is in conformity with an elaborated, ideal code (Ryan, 1981).

Gnosticism.--Gnosticism is the philosophy characteristic of various cults in the early Christian centuries. It places emphasis on knowledge rather than faith and believes that matter is evil (Webster, 1967).

Humanism.--The doctrine of humanism places emphasis on man and, religiously and philosophically, abandons all concepts of the supernatural (Byrne, 1977:370).

Judeo-Christian.--Religious thinking in the Judeo-Christian tradition centers on a personal God, as related to the Jews and Gentiles who profess to accept the religious and moral principles taught as truth by Jesus Christ (Webster, 1967). For the purposes of this study, Protestant, Catholic and Jewish faiths will be grouped and be referred to as Judeo-Christian.

Level of Development of Moral Judgement.--The level of Development of Moral Judgement is the Kohlbergian stage into which 67 percent of an individual's reasoning patterns fall when confronted with a social dilemma with inherent moral implications (Kohlberg, 1981).

Moral.--Character or conduct described as moral is in conformity with the generally accepted standards of goodness or rightness (Ryan, 1981).

Moral Education.--Moral education is the school's role (conscious and unconscious) in helping students think about issues of right and wrong and to behave in an ethical manner (Ryan, 1981).

Morals.--Morals are values that involve right and wrong in human relations, or the sense in which individuals interact. (Ryan, 1981).

Naturalism.--Naturalism is a world-view that denies the existence of the supernatural and holds that the universe is self-operating. The world and man operate as a result of natural forces and laws (Byrne, 1977:370).

Neoanimism.--Neoanimism is the doctrine that the soul is the vital principle of organic development (Webster, 1967).

Neo-Confucianism.--The rationalistic revival of Confucian philosophy in the 11th century A.D. is called Neo-Confucianism. It was a major influence on Chinese thought for over 800 years (Webster, 1967).

P Score.--The P score, or Principled Morality Score, is the index that locates a subject's development in moral decision-making in terms of the relative importance he gives to principled (Stages 5 and 6) moral thinking (Rest, 1974:4-2).

Principled Stages.--The Postconventional or Principled Stages of moral judgement are the level at which there is a clear effort by the individual to define moral values and principles that are valid and applicable because of their universality, rather than as a result of their definition and identification by a certain group (Kohlberg, 1981:18).

Private School.--A school that receives no government funding and exists primarily to implement a curriculum based on a particular philosophy or set of beliefs in addition or as an alternative to the humanistic base of the public school system is a private school.

Public School.--A school that is a governmental unit, the curriculum and leadership of which are controlled due to government funding, is a public school. In line with the influence of founders Horace Mann and John Dewey, the philosophic base of public schools tends toward humanism (Morris, 1977:22-23).

Religion.--Religion is a particular expression of faith in which concerns about the ultimate environment are defined (Kohlberg, 1981:323).

Taoism.--A Chinese religion and philosophy, Taoism advocates a life of complete simplicity and naturalness (Random House Dictionary, 1980).

Theism.--Theism is belief in a personal God (Byrne, 1977: 372).

Values.--Values are acts, customs, institutions, etc. that are regarded in a particular, usually favorable, way by an individual or group (Ryan, 1981).

World-View.--World-view is the individual's philosophy of total reality. It is a systematic philosophy of, or insight into, the workings and plan of the entire universe (Byrne, 1977: 372).

Assumptions and Limits of the Study

The generalizability of the study will be limited by its scope. The geographic range and number of schools selected to participate in this study is limited to schools considered to be extremes on the moral education continuum. Because schools are located in the same general geographic area, homogeneity in variables such as race, income and religion may exist.

Assumptions underlying the study involve the population sample, school curricula, and test instruments. They are:

1) that, as twelfth graders, the students sampled have had more exposure to the school system which they attend, its hidden curriculum and philosophy, than any other grade level of students in that school system.

2) that, as high school students, the sampled students are part of a family unit, i.e., are living in a supervised household under the jurisdiction of one or two parents or guardians rather than in a dormitory or boarding school situation separated from direct adult influence. As such, it is assumed that religious affiliation and influence from the parents and church will be more pronounced and religious background somewhat sheltered from the influences of competing philosophies existing outside the family structure.

3) that, although they self-selected the history class in which they would enroll, the public school students tested approximate a random sample of the entire senior class. This assumption is based on the large number of sections taught by the participating teacher (five out of eight sections) and on scheduling conflicts which somewhat restrict the student's choices.

4) that, as educational institutions preparing students for vocations and higher levels of education, the schools offer comparable core curricula including English, history, science and mathematics.

5) that, the Defining Issues Test (DIT) and Environmental Issues Test (EIT) are parallel instruments which measure moral reasoning, the former in a general social context and the latter in an environmental setting.

6) that, the short form DIT is highly correlated with the long form DIT, thus yielding essentially the same measure of moral reasoning in general social issues.

7) that, based on the previous two assumptions, the short form DIT is a parallel instrument with the EIT.

Summary

Increasingly, environmental educators are recognizing that environmental quality is more than a scientific-technological issue. Environmental decision-making extends into the realm of societal morals and philosophy. However, values and ethics are little understood and should be further studied, especially where they interface with environmental issues. The cognitive moral development model proposed by Kohlberg offers a theory base useful in understanding an individual's orientation in making moral decisions.

The need exists for investigation of Kohlbergian theory in the context of environmental education. Research of this nature is needed to:

1) incorporate this developmentalist approach into the framework of environmental education programs;

2) identify variables that influence the degree of environmental judgement; and

3) determine the educational atmosphere and strategy most conducive to stimulating the development of environmentally ethical decision-making.

This study will attempt to apply Kohlbergian theory to the realm of environmental decision-making. It seeks to determine if the Judeo-Christian influence in the school setting and in the individual's religious background affects the level of social and environmental decision-making in high school seniors.

CHAPTER II

Review of the Related Literature

Introduction

The purpose of this chapter is to construct a theoretical model for the study based on a review of related literature. The model will be constructed on three theoretical thrusts:

1) the cognitive development model of Lawrence Kohlberg,

2) the philosophy and purpose of moral education in the schools,

3) the influence and role of the Judeo-Christian tradition on moral judgement.

Cognitive Development Model

The cognitive development model expounded by Lawrence Kohlberg has its philosophic roots in the traditions of Socrates, Plato, Dewey and Piaget. It holds that, just as people develop physically and cognitively, they also develop in their ability to make moral judgements. Moral development, then, is a change in thinking capabilities and in the structure of thought processes, not merely an accumulation of information (Cheu and Iozzi, 1978).

The importance of moral development is seen in its parallel to Piaget's intellectual development theory (Table 1). As higher and higher thought structures are attained, one's social perspective and reasoning capabilities are extended. Solutions to moral problems become more consistent and generalizable (Cheu and Iozzi, 1978).

TABLE 1

Comparison of Piagettian and Kohlbergian Developmental Categories[a]

	I	II	III
Piaget	Pre-Operations	Concrete Operations	Formal Operations
Kohlberg Levels	Pre-Convention	Convention	Post-Convention
Reasoning Mode	Transductive	Deductive	Inductive
Control Source	Autonomy	Heteronomy	Homonomy
Religion	Animism/Magic	Naturalism	Supra-Naturalism
Faith	Ego-sensory	Adhering	Embracing or Cooperating

---

[a] Joy, 1980:11

Stages of Moral Development.--Kohlberg has developed a typology to understand the stages of moral development based on the observation that moral thinking develops in stages through which all people pass sequentially. The classification includes three progressive levels, each with two stages.

Preconventional Level: The egocentric orientation of childhood is characteristic of Kohlberg's first level. Decisions are based on concern for self-preservation and ruling authorities.

Stage 1: Punishment and Obedience Orientation. At this stage, the individual does what s/he must to avoid punishment.

Stage 2: Instrumental Relativist Orientation. At this stage, the individual does what will bring personal pleasure.

Conventional Level: Orientation toward authority, peers and family is characteristic of Kohlberg's second level of moral judgement. Individuals in this stage, generally adolescents, demonstrate respect for authority and follow social rules and order.

Stage 3: Interpersonal Concordance or "Good Boy - Nice Girl" Orientation. In Stage 3, individuals are motivated by a need to conform and avoid disapproval from others.

Stage 4: Society Maintaining Orientation. At this stage, one does what recognized authorities say.

Postconventional, Autonomous, or Principled Level: A stage mainly typical of adulthood, this Kohlbergian level is characterized by universal justice and equality for all. Decisions favor the social order or good, as long as personal good is not violated.

Stage 5: Social Contract Orientation. Individuals in Stage 5 display actions governed by recognition and acceptance of democratic laws.

Stage 6: Universal Ethical Principle Orientation. Stage 6 is characterized by a broad yet genuine concern for individual life and a respect for human dignity (Miles, 1977; Kohlberg, 1981).

In recent publications, Kohlberg (1981) has pondered the existence of Stage 7. Leaving behind the societal justice of Stage 6, and Stage 7 moves toward a sacrificial (agape) love and human brotherhood. Kohlberg identifies Stage 7 as a metaphysical stage rather than a stage of moral judgement, however:

> "There is no Stage 7 of moral judgement. But there are a set or problems left over at Stage 6 which cannot be answered on Stage 6" (Joy, 1980:13).

Because Stage 7 is defined as an ontological rather than a moral stage, and because it has not yet been incorporated into Kohlberg's developmental model, Stage 7 is not dealt with as part of this study's theoretical model.

Kohlberg's theory of cognitive development also seems to overlap Maslow's motivation theory. Both theories are in the functionalist tradition of Dewey (Maslow, 1970). Kohlberg's Level 1 is similar to Maslow's basic level of physiological needs. The dependence and need for structure, order, law and limits in Maslow's safety level and the importance of group membership and approval on the love/friendship level somewhat parallel Kohlberg's Level 2. The lowest drives of Maslow's esteem level are for independence and freedom, as is Kohlberg's transitional Stage 4½. Parallels between Maslow's esteem and self-actualization levels and Kohlberg's Level 3 are vague. Maslow explains this:

> "Behavior is determined by several classes of determinents, of which motivation is one . . ." (Maslow, 1970:29).

Thus although both the developmental and motivation theories are related to behavior theory, they address different aspects of behavior. Only the former will be explored in this study.

Stage Transformation.--On the basis of interviews, Kohlberg (1981) has determined that about 67 percent of most people's thinking can be identified at a single stage. The sequence of stages through which individuals progress is not significantly altered by varying social, cultural or religious conditions. The rate of progress, however, is not consistent between individuals. For example, middle class children, develop faster and further than urban lower class children. The latter in turn develop faster than lower class village children (Hash, 1975). Comparative studies have shown no important difference in the level of moral development based on religion among Buddhists, Moslems, Jews, Catholics, Protestants and athiests (Hash, 1975). Fowler (1976) observes that religious values apparently go through parallel and similar developmental stages as moral values.

Moral development may stop at any stage. Cheu and Iozzi (1978) found low rates of advancement or stage fixation especially prevalent at upper levels. Advancement from one stage to the next is a result of reasoning stimulated by confrontation with inherent moral issues. According to Kohlberg (1981), moral maturity is evidenced the formation of moral principles independently from the moral judgements expressed by peers and adults.

Although reasoning in the moral realm is dependent on cognitive development, findings show that it does not necessarily develop analogously. For example, 50 percent of late adolescents are formal logical thinkers, but only ten percent of formal thinkers reason at Kohlberg's Stages 5 and 6, the principled stages (Iozzi, 1978).

Moral Education

Carl R. Rogers, a humanistic psychologist, claims that "man has within him an organismic basis for valuing" (Hash, 1975:43). The major value determiners, however, are nebulous but ubiquitous. Though age, sex, religion, race, ethnicity, social-class origins and residential origins are generally recognized as major factors in determining an individual's values clinical and case studies indicate that idiosyncratic experiences also are important (Hyman and Wright, 1979). These experiences make research into the roots of value systems difficult.

In spite of the uncertain origins of ethical systems, developmentalists have jelled three fundamental ideas that provide the rationale for their moral education programs:

1) structural organization, i.e., that moral education should develop organizational procedures by which the individual analyzes and makes decisions about social problems rather than teach a set of values,

2) developmental sequence, i.e., that cognitive skills develop from simple to complex through a sequence of levels, and

3) interactionalism, i.e., that interaction with the environment and moral dilemmas results in development, and that cognitive processes and patterns are not innate (Rest, 1974a).

Purpose of Moral Education.--The goal, then, of developmentalist moral education is to stimulate the step by step advancement of an individual through the stages of moral development. Corollaries to this goal require that:

1) the educator be interested in facilitating development as far as possible in the individual, even if the person may never reach the highest stages, and that

2) the educator strive to prevent fixation of a person at any given stage. If the educator cannot stimulate development in a particular individual, his concern should then be to keep that person "fluid" for a later move.

3) Educators stress not only vertical development through

the stages, but also horizontal development within them. This stimulates the individual to apply his own moral judgement to his behavior at each stage (Rest, 1974a; Kohlberg, 1981).

Schools as Moral Educators.--Schools are moral educators. Studies involving thousands of white adults in four age cohorts found:

> ". . . large, lasting and diverse good effects on values . . . coupled with very large, pervasive and enduring effects in heightening knowledge, receptivity to knowledge, and information-seeking"

attributable to American formal education (Hyman and Wright, 1979:61).

Ryan (1981) discusses the avenues through which the schools mold character. The conscious curriculum or visible aspects of the school program, includes career education, myths and folk tales, and posters and slogans that decorate the classroom. Kohlberg (1981) cites conscious moral education as a basic function of the public school because it, like the government, is an institution responsible for maintaining and transmitting some of the values of society. This requires "explicit educational thought about the moral objectives of education" (Kohlberg, 1981:305).

Students are also influenced through the hidden curriculum, or unspoken and often unintended transmitters of values. Classroom, student and school cultures as well as formal gatherings and rituals are aspects of the hidden curriculum. At awards assemblies, students are taught that academic success is to be valued. When they see a teacher violating a school policy, they learn that the rule is not important. When they hear what peers did after a basketball game, they realize what character qualities are necessary for peer acceptance. The hidden curriculum is generally the most powerful aspect of education (Ryan, 1981).

Largely because of the strength of the hidden curriculum, Kohlberg contends that schools cannot be "value neutral" but must engage in moral education (Kohlberg, 1981:297, emphasis his). Court debates regarding the legality of religious education have confused the issue by failing to differentiate between moral education and religious education. The content of moral education, according to Kohlbergians, must be defined in terms of the values of justice fundamental to our society, which in themselves prohibit indoctrination of beliefs by majority or minority groups (Kohlberg, 1981).

Discontent specifically with the hidden moral curriculum of the public schools has parented a private school "boom" in the past decade. Traditionally, the primary purpose of private schools has been to develop religious beliefs and sentiments. These were largely ineffective as builders of moral character because of the dichotomy created: religious beliefs and behavior were not integrated with moral dilemmas of everyday life (Kohlberg, 1981). Studies by Hartshorne and May (1930) showed that religious affiliation and religion-related indoctrinative "character education" failed to strengthen morality in the area of conduct. Kohlberg's study (1981) showed that these variables also failed to develop moral judgement.

The current thrust in private schools distinctively emphasizes moral education and the development of a worldview which produces moral character (Byrne, 1977). Reacting to the value neutrality or perceived value bias in public schools, private schools operate on a shared sense of a larger purpose. Values are clearly defined, shared and taught, thus creating a total school as well as classroom atmosphere extremely important in the moral education process (Ryan, 1981; Kohlberg, 1981).

The impact of this unified values front on students in the school was studied by Feather in 1972. Comparing state and independent (i.e., public and private) schools in Adelaide, Australia, Feather expected to find the students' own value priorities more closely matched to the perceived value priorities of the school in independent than in state schools. Feather expected this due to the "constant and self-contained environment" in independent schools as opposed to one that "involves greater change" in state schools. Also, Feather reasoned, "declared emphasis on values is reinforced in various ways within the independent school" (Feather, 1975:89).

Feather did find a closer value match in the independent schools than in the state schools, suggesting that the former were more effective moral educators. He also found greater value parallels with students who had been in the school system longer and with schools with the strongest moral education emphasis expressed in school environment. Interestingly, Feather found all school indexes low. This implies that the schools were not having a large impact on the students attending them (Feather, 1975).

Methods of Moral Education.--Recognizing the importance of school atmosphere and of a socratic approach to the development of moral judgement, a teaching plan to stimulate this development has been suggested (Sundal, 1980). The fourfold plan involves:

1) confrontation with an issue,
2) statement of individual positions on the issue,
3) testing of the reasoning behind the positions, and
4) reflection on personal reasoning and that of others.

The reasoning and evaluation process is important because morally immature tendencies toward outward compliance without inward agreement are encouraged by forcing children to accept an act or decision. It is more effective to have children examine their behavior, both pros and cons, on their own terms (Kohlberg, 1981). The evaluation and discussion process catalytic to change is dependent on +1 modelling for maximum effectiveness, i.e., alternatives to the behavior under discussion and the teacher's verbalizations should be one stage above the level of development of the child (Kohlberg, 1981). Incorporating "real world" moral dilemmas into school curricula in this way is considered by developmentalists to be the best way to prepare the student to handle social and moral responsibility (Kuhmerker, Metkowski and Erickson, 1980:132).

Ecological Problems and the Judeo-Christian Tradition

A societal problem of particular interest to this study is environmental quality. Barbour (1973) identifies four historical roots of the environmental condition:

1) economic institutions since the Industrial Revolution,

2) the technological use of raw materials to create quantities of waste,

3) growth in population and increased living standards, and,

4) attitudes toward nature as influenced by Western religion and culture.

Miles (1977) expands on the later, stating that cultural history has determined the way Western men perceive themselves, the environment, and their place in relation to the environment, thus implying that environmental problems are, in fact, moral and ethical dilemmas.

A closer analysis by Iozzi confirms the implication. He states:

> "When confronted with values decisions regarding food production and consumption, population stabilization, nuclear power, energy production and consumption, utilization and depletion of natural resources of all kinds, pollution, and indeed nearly all environmentally-related decisions, we are in fact dealing with moral values" (Iozzi, 1978:3).

Means, a sociologist, sees man's relation with nature as a moral problem, not just a scientific one. He links the contemporary moral crisis in general, and the environmental in specific, to society's disregard for the value of nature (Means, 1967).

A similar observation was made by Charles Darwin near the end of his life. He noted that, as he got older, two things became dull to him: his joy in the arts and his joy in nature. He attributed this adverse effect to his propositional philosophy that nature, including man, is based only on the impersonal, time and chance (Schaeffer, 1970). In his analysis, Schaeffer notes that society is experiencing the same loss of joy that Darwin observed. Schaeffer continues, "the death of 'joy' in nature is leading to the death of nature itself" (Schaeffer, 1970:11).

Recognizing that environmental quality is an issue requiring moral decisions and responses, Iozzi examines the problem in the light of the cognitive development model. He concludes that environmentally-related decisions and behaviors have been characteristic of the lower, self-interest stages of moral development (Iozzi, 1978). The conservation system has been based on economic value. Such a system is inherently weak because most members of biotic communities have little or no economic value (Leopold, 1949).

The solution to existing environmental problems and avoidance of future crises, then, will require a change in thinking, environmental perceptions and values. It will require moral education (Miles, 1977) as well as cognitive environmental education. Iozzi shows the relationship between the two levels of environmental education on the individual:

> "The development of an environmentally ethical citizenry is a qualitatively significant step beyond environmental literacy--a major goal prior to this time. I believe that one who is environmentally ethical is at least as knowledgable as the environmentally literate person but in addition exhibits a reverence and respect for all environments . . . and is motivated to change his or her lifestyle to ensure the survival of a quality environment for all living things" (Iozzi, 1978:3).

Historian Lynn White agrees that there is no solution unless the base of man's thinking is changed. Environmental values depend on what people think about themselves in relation to the things around them. Our view of the environment, White says, is "deeply conditioned by beliefs about our nature and destiny--that is, by religion" (White, 1967:1205).

How can the base of man's thinking be changed? Nash (1981) suggests four institutions with the influence and responsibility to effect such change:

1) the counterculture of the 1960s, which sensitized society to environmental matters but has since faded away;

2) educational institutions, which traditionally have stressed some social ethics but few, if any, environmental ethics;

3) legislation, which in the 1970s began to effect restraints and changes; and

4) the church, i.e., the Judeo-Christian tradition. Nash commented that the church has failed to exert a positive influence in environmental issues. Rather, its impact has been detrimental to environmental conditions.

Supporting White's charge (1967) that the Judeo-Christian tradition bears a huge burden of guilt for environmental deterioration, two general assertions are apparent in the literature. The first is that thoughtless exploitation of natural resources has been encouraged by the biblical notion that man is above the rest of nature and is God's representative in reducing the autonomy of nature and subjugating it to the dominion of God and man. Nature exists for man's purpose (McHarg, 1964; White, 1967; Ruether, 1978). Secondly, Judeo-Christianity has fostered an other-worldly orientation and attitude of contempt and disregard for the earth, thus actually setting man against his habitat (Berry, 1973; Dobel, 1977).

Religious Responses: Neoanimism.--Since the roots of environmental problems are largely religious, the remedy must also be essentially religious (White, 1967). Since the later 1960s, two such responses to the ecological crisis have arisen.

The first response has been neoanimism, reiterating that the biblical charge to conquer and subdue the earth is at the base of environmental problems (Rueter, 1978). White (1967) reflects on St. Francis of Assisi and praises his substitution of the idea of the equality of all creatures for the notion of man's superior position and rule over nature. Nash (1981) claims that "rocks have rights," and should be treated as such. Rebelling against society's concept of nature, others advocate Eastern philosophies as superior to Western views of the environment. Chinese savant Wou Saofong, for example, criticizes Western environmental ethics and emphasizes that "China's behavior . . ., throughout its long history, is above criticism . . . because China knows how to face the ever changing world with immutable moral precepts" (Murphy, 1967:281).

Problems with the integration of neoanimistic principles into Western culture have kept it a weak response at best (Schaeffer, 1970). For one thing, its exoneration of Eastern environmental attitudes ignores the fact that all cultures have abused the environment due to economic or population pressures, or ignorance (Dobel, 1977). For example, although philosophers view the Chinese attitude toward nature through the refined sentiments of Neo-Confusianism and Taoist philosophy, conservationists and geographers examining historic records see adverse effects: the Buddist practice of cremation, requiring vast amounts of wood, seriously depleted the Chinese timber supply in the 10th to 14th centuries, and the art of writing, requiring soot from burnt pine, caused severe deforestation (Tuan, 1974).

Secondly, neoanimists, often militantly pro-earth and anti-progress, give little recognition to the fact that environmental problems take place within an economic system. Critical of industrialism and technology, they do not suggest ways to change the existing system but to resist it by returning to a less technological condition. This approach holds little appeal, especially to developing countries and societies (Dobel, 1977; Ruether, 1978).

Finally, there are ethical consequences to neoanimism. By considering all elements of the biotic and abiotic communities equal, human dignity and worth is lost (Schaeffer, 1970;

Dobel, 1977; Ruether, 1978). Claims for social justice and human responsibility, then, become meaningless.

Religious Responses: Stewardship.--The second major response of the late 1960s, to the ecological crisis has been the stewardship model, a defense of the biblical approach. Gabriel Fackre, a theologian, states that the biblical charge to man is for responsible stewardship, not unlimited dominion. Man is to be a manager and caretaker of the environment and will be accountable for its treatment (Fackre, 1973).

The biblical concept has traditionally been misinterpreted, however, resulting in poor ecological practices by Judeo-Christians (Schaeffer, 1970). Late apocalyptic and gnostic thought in the Christian era taught that nature, a habitation of the devil, was evil and that a truly religious man would escape from nature to a higher spiritual realm outside of the body and visible world (Rueter, 1978). The early church rejected this popular dualistic philosophy as a denial of the goodness of nature (Fackre, 1973), although its negative view did influence Christianity into the 17th century (Ruether, 1978).

Byzantine Pre-Renaissance Christianity popularized the philosophy that nature is of no real importance, and that the only truly valuable things are heavenly (Schaeffer, 1970). This other-worldliness and world-denial had its roots in Hellenistic ideas rather than biblical ones (Fackre, 1973) and, in spite of an initially restored concept of nature as good and a manifestation of divine reason and order (deism) by the new naturalism and science of the 17th century, soon merged with the Cartesian view that human reason is set outside and above nature. This birth of the technological approach brought with it abusive practices which are at the heart of modern exploitation. Current exploitative practices, then, do not correspond to early religious ideas about nature (Ruether, 1978). The non-Christian deism and theism in the 17th and 18th centuries redefined biblical teachings to accommodate the newly secularized nature and advancements in science and trade (Dobel, 1977).

Schaeffer (1970) and Ruether (1978) contend that the Judeo-Christian tradition in relation to nature has been misunderstood. The biblical approach to nature, they say, stresses the wise use and conservation of resources for future generations. Any ecological problem is seen by some as a social issue and an ethical sign--an environmental response to social injustice. An example:

> "Erosion . . . is not just a fact of nature but an ethical judgement on the exploitation of natural resources by the rich at the expense of the poor" (Ruether, 1978:1132).

This is a reference to the exploitation of human labor and refusal to address the social cost of production (i.e., pollution) (Ruether, 1978). Dobel summarizes that the Judeo-Christian approach to environmental concerns is unique in that it can insist on "reasonable harmony with the world without abandonment of social justice" (Dobel, 1977:907).

Summary

The theoretical model constructed from the literature holds that people develop in their ability to make moral decisions. This is true in a general social context as well as in specific contextual areas such as environmental quality. Studies show that schools with conscious goals concerning moral education and an atmosphere that reinforces these objectives are more effective moral educators.

Kohlberg found no significant difference in the level of moral development due to religious affiliation. Other writers, however, cite Judeo-Christianity as a traditionally negative influence on the level of moral judgment in a specific environmental context. In the past decade, the redefinition of traditional religious teachings to include stewardship has provided a base which could result in wise ecological decision-making and social justice.

CHAPTER III

Methods and Procedures

Research Design

The study was ex post facto research, the goal of which was to explain phenomena. Ex post facto research studies subjects who have assembled themselves into intact groups and have purposely selected a particular level of the independent variable that is proposed as a possible explanation for the variability in the dependent variable (McCracken, 1981).

A modification of the static group comparison design described by Campbell and Stanley (1963) best illustrates the study:

$$\begin{array}{cc} X_1 & O_{1,2} \\ \hdashline X_2 & O_{3,4} \end{array}$$

In the design, X_1 and X_2 represented levels of the independent variable (type of school) hypothesized as a factor that explains the variability of the dependent variables: level of development of moral judgement and development of environmenttal judgement. $0_{1,2}$ and $0_{3,4}$ were measures of the dependent variable, i.e., the administration of two tests to senior students in each type of school.

Internal validity in the study was established by examining plausible rival variables and by using statistical analysis for control. Internal validity should be enhanced and measurement error reduced by the use of two valid instruments.

Subject Selection

The population under study in this investigation was comprised of senior (twelfth grade) students in Columbus area high schools. The population was selected for the study because it was assumed that, as twelfth graders, they had had more exposure to the school systems under study than students at other grade levels. Also, because most high school seniors are still responsible to a family unit, religious influence from the parents and church were assumed to be more pronounced and religious background somewhat sheltered from the influences of competing philosophies existing outside the family structure.

Senior classes in three private and one public school in the Columbus area were sampled for the investigation. These four schools constituted a purposive sample, i.e., they were selected on the basis of predetermined criteria. Private schools were selected on the basis of their:

1) Bibliocentric curriculum, i.e., biblical base and the infusion of religious and associated moral beliefs throughout the curriculum after explicit thought about the moral objectives of the school,

2) range of high school science courses, including earth science, general biology, the chemistry and physics, and

3) belief in the Divine Command Theory, i.e., belief that moral absolutes exist and have been defined by divine command in the Bible or other documents of revelation (Kohlberg, 1981).

An evaluation of private schools in the Columbus area based on these criteria and their selection for participation in the study was made in consultation with the director of the Mid-American Region of the Association for Christian Schools International, and after reviewing literature and publications from private schools. Public schools were selected on the basis of their location in the same geographic area or school district as selected private schools in an effort to minimize the effect of extraneous variables such as socioeconomic status and degree of urbanization.

Administrators of private schools selected to participate in the study were contacted by the investigator. An introductory cover letter, response card, summary of the thesis proposal and sample questions from the instruments (Appendix A) were sent as the initial contact. Receipt of the response card was followed by telephone contact with the administrator and/or teachers involved to further explain the study. Public schools were approached in a similar manner by a laison in The Ohio State University Education Department. A meeting with each test facilitator to explain testing procedures and answer further questions was scheduled two weeks in advance of the test date.

Schools electing not to cooperate were contacted by the education laison or by the investigator and further information about the study supplied. If the decision was not reversed, another school meeting the aforementioned criteria was contacted to participate. Equivalent alternate schools were contacted until no more schools meeting the above criteria were available. Although it was hoped that six schools would participate in the study, the final total was four schools.

Because of small size (class of 50 or less), the entire senior class in private schools was sampled. In the larger public school, the senior class was comprised of over 500 students. In order to approximate equal cell sizes, a representative sample of the senior required history classes equal to twenty percent of the senior students was tested. The sampling units of concern were groups or levels of the independent variables.

Outcome Measures

The dependent variables under study were:

1) the student's level of development of moral judgement (0_1 and 0_3), as measured by the P score on the Defining Issues Test, and

2) the student's level of development of environmental judgement (0_2 and 0_4), as measured by the P score on the Environmental Issues Test.

Two instruments were used to measure the influence of the independent variables on the dependent variables: the Defining Issues Test and the Environmental Issues Test. A Student Survey was used to collect demographic information considered as plausible rival variables.

The Defining Issues Test (DIT)

The Defining Issues Test (DIT), developed by James R. Rest of the University of Minnesota, is based on Kohlberg's moral dilemma series (Appendix C). It is designed to measure an individual's preference for a particular mode of reasoning in moral issues.

The DIT exists in two forms: a six-dilemma test which requires 50-60 minutes for completion, and a shorter version containing three stories and requiring 30 minutes to complete. Because of time restrictions within the school settings under study, the short version DIT was used.

The DIT stories contain inherent moral dilemmas. Each story is followed by twelve issue statements individually keyed to a specific Kohlbergian moral reasoning stage. Respondents assign a five-category priority rating (greatest to no importance) to each statement based on its importance to them in making a decision regarding the dilemma. The four most important items are finally selected and listed. These selections are scored in terms of the moral reasoning level they represent.

Each dilemma series includes an "M" or nonsense statement and an "A" or anti-establishment statement. The meaningless M statements are included to detect if the respondent is guessing. The A statements are considered to represent Stage 4½.

Although the test yields scores corresponding to Stages 2,3,4,4½, 5A,5B, and 6, the most-used index of the DIT has been the "principled" morality score (P score), a combination of Stages 5 and 6. Tests were objectively scored with the use of scoring keys provided by Rest and Iozzi (Appendix D), and the P score calculated using the formula:

$$\text{P score} = \frac{5A + 5B + 6}{\text{no. of dilemmas} \times 10} \times 100$$

The numerator of the equation is the subtotal of item responses from Kohlberg's Stages 5A, 5B and 6, the "principled" stages. Multiplication by 100 yields a percentage score, ranging from zero to 95. The P score is thus interpreted as the relative importance a respondent gives to morally principled considerations in making moral judgements (Iozzi, 1978).

Internal consistency checks during scoring were made to detect respondents who were randomly checking responses or did not understand the directions (Rest, 1981). As recommended in the scoring manual, these students' tests were eliminated from the study.

Validity.--According to Rest (1974b), the DIT has the most extensive data base yet collected of any single measure of moral judgement, and no other instrument to measure moral judgement has demonstrated such high validity and reliability. Although no single piece of evidence can validate the DIT, a strong case for its validity can be built from a range of related studies.

Construct validity tests the validity of the theoretical construct of an instrument (Kerlinger, 1973). In the case of the DIT, moral judgement is a construct which, in theory, represents different organizations of thinking. Therefore, the instrument's purpose is to gather information which is indicative of the thought processes of the individual (Iozzi, 1978).

As cited by Rest (1974b), the construct validity of the DIT is demonstrated by results from several studies.

1) Correlation between age and DIT scores would be expected only when subjects are undergoing normal developmental advances over time. This is supported in a study involving four major student groups (junior high, senior high, college and graduate) in which DIT scores were significantly higher for groups presumed to be more advanced in their level of development. The correlation between age and P scores was in the

.60s. Furthermore, in a sample of nonstudent adults aged 23-49, P score correlated negatively with age ($r = -.10$), supporting the prediction that P score need not invariably go along with chronological age (Rest, Cooper, Coder, Masanz and Anderson, 1974).

2) The cognitive development model and DIT predict an upward change in a student's level of moral judgement over time. This is shown in three longitudinal studies using two samples of junior high, senior high, college and seminary students and a third sample of adults enrolled in moral education classes. Measurements over two, four and six years showed significant upward changes (matched $t = 5.50$, $p \leq .0001$) on the P index in 66 percent of the subjects. Downward shifts were evident in seven percent of subjects tested (Rest *et al.*, 1974).

3) The cognitive development model as explained by Kohlberg stresses the importance of classroom atmosphere to moral development. Educational exposures designed specifically to catalyze moral development are expected to be more effective than general art, logic or religion courses. Studies by Blatt and Kohlberg (1974), showed directional patterns of upward movement and pre-post test gains in students in classes where moral education was defined as a specific school function.

Students exposed to logic, art or religion courses showed no significant changes in DIT scores. Correlation of the P scores before and after the courses was in the mid .60s. and there was no upward movement over a period of twelve weeks. Those exposed to an ethics course, however, showed upward change in P score significant to the .002 level (Panowitsch, 1974).

4) The Kohlbergian model predicts no difference in the level of moral judgement due to sex, but that socioeconomic status will affect the developmental level. Studies by Rest et al. (1974) showed a low correlation between sex and DIT (r in the low .20s, $p \leq .05$). P score was more highly correlated with aptitude than with socioeconomic status indicators (father's occupation and education).

5) Do subjects select high stage responses because they reason on that level or because they sound ideal and correct? Studies by McGeorge with college indicate that subjects can fake downward but not upward on the DIT ($p \leq .001$) (Rest et al., 1974), which would be expected with the cognitive development model.

Criterion-related validity is studied by comparing the instrument or scale scores with an external criterion known to measure the attribute under study (Kerlinger, 1973). The following studies, cited by Rest (1974b), demonstrate many measures of criterion-related validity for the DIT. A summary of comparative test results is shown on Table 2.

TABLE 2

Criterion-Related Validity of the DIT[a]

Correlations in Ninth-Grade Sample

MEASURE	1	2	3	4	5	6	7
1. DIT							
2. Comprehension	.58**						
3. Libertarianism	.37**	.08					
4. Law and Order	-.23*	.12	-.41**				
5. DAT	.35**	.41**	.11	-.06			
6. Father's Occupation	.02	.08	-.01	.07	-.01		
7. Father's Education	.17	.14	.09	-.01	-.07	.59**	
8. Sex	.25*	.22	.20	-.20	.06	.04	-.08

Note: DIT = Defining Issues Test; DAT = Differential Ability Tests; n=73

* $p \leq .05$

** $P \leq .01$

[a] Rest *et al*., 1974:497

1) The DIT correlates significantly ($P \leq .01$) in the 1960s with studies of moral comprehension. These results indicate that an individual's choice of the most important issues in hypothetical moral dilemmas is related to his ability to comprehend high-stage conceptions. Correlation with measures of aptitude, achievement and IQ (Differential Abilities Test and Iowa Test of Basic Skills) was in the .30 to .40 range (Rest *et al.*, 1974).

2) In studies with the DIT and Kohlberg's test in heterogeneous groups, the P score correlations range in the high .60's (Rest *et al.*, 1974).

3) Studies with people's stances on controversial moral-political attitudes as measured on the Law and Order Test and Libertarian Democracy Test have correlated in the .60's, highly significant beyond the .01 level. This indicates that an individual's choice of the most important issues in hypothetical moral dilemmas is related to his value positions on real moral-political issues (Rest *et al.*, 1974).

Content validity consists basically of judgement regarding the sampling adequacy of the content covered by the measuring instrument (Kerlinger, 1973). As previously cited, correlation with Kohlberg's test is in the high .60's. Although this correlation is not high enough to consider the two tests equivalent, it is the highest correlation with Kohlberg's test for a sample (n = 47) of at least this size (Rest _et_ _al_., 1974). Thus the content issues of the DIT adequately measure the stages of moral judgement proposed in the cognitive development theory.

Test-retest reliability for the DIT averages .81. Internal consistency averages .78 (Rest _et_ _al_., 1974).

Although this discussion of reliability and validity is in reference to the long form DIT, it has been shown that the P score on the short version correlates .93 with the P score on the long version (Rest _et_ _al_., 1974). Therefore, statistics have some generalizability between forms of the instrument.

The Environmental Issues Test (EIT)

The Environmental Issues Test (EIT) was developed by Dr. Louis Iozzi of the Institute for Science, Technology and Social Science Education at Rutgers University (Appendix C). As with the DIT, the test is designed to gather information indicative of the thought patterns and processes of the individual. It differs from the DIT in that the dilemmas are set in an environmental rather than a general social context. Thus the instrument can be used to determine if people score at different Kohlbergian levels on moral issues set in a different context.

The EIT contains five dilemmas and requires 50 - 60 minutes to complete. As in the DIT, derivation of the P score permits the detection of small increments of change in the individuals' thought patterns.

Validity.--Construct and criterion-related validity for the EIT have been established by the same procedures as Rest's and have yielded similar results (Iozzi, 1978). When the EIT was given to 40 ninth grade students to determine test-retest stability, the Pearson product moment correlation was .84.

If the EIT is able to reliably differentiate between levels of moral maturity, older, more educated children would be expected to achieve higher scores on the EIT than younger children. When administered to college, high school senior and ninth grade students, the mean P scores did show a difference between groups, higher stages being used more by more developed and educationally advanced students. A separate mean score for college environmental science majors yielded the highest mean EIT score. A one way analysis of variance of the results yielded an F value of 37.2 ($p \leq .001$). Statistical analysis of mean scores using the Scheffe method for multiple contrasts also confirmed a difference significant at the $p \leq .001$ level (Iozzi, 1978).

If the EIT effectively measures the subject's value system rather than value-neutral intellectualizing skill, the EIT score should correlate significantly with other purported measures of values and attitudes. However, because the EIT measures a specific set of values (moral values), only a moderate correlation with measures of general environmental attitude or value inventories would be expected. When compared to the affective subscale on the Ecology Attitude Inventory to determine the relationship between EIT score and emotionality about environmental issues, a correlation of .36 was found. This moderate correlation ratio is significant at $p \leq .001$ (Iozzi, 1978).

As with the DIT, P scores on the EIT would expectedly be higher after students had been exposed to a curriculum specifically designed to accelerate or increase the moral maturity levels. Preliminary analysis of scores of students exposed to such modules produced by the Institute for Science, Technology, and Science Education shows significantly higher post-test scores for students exposed to the modules than for the unexposed control group (Iozzi, 1978).

In validating the DIT, Rest showed that selection of a particular issue statement reflects the students' understanding of moral concepts inherent in that statement rather than mere selection of statements that "sound good" (Rest et al., 1974). Because the issue statements on the DIT and EIT are the same, the original validation is applicable to the EIT (Iozzi, 1978). A correlation of the EIT with the DIT based on 189 students was .73. This correlation indicates that both tests measure moral reasoning. Iozzi explains the difference in test scores as attributable to the contention that people apply different levels of moral reasoning in different situations, i.e., in an environmental as opposed to a general social context (Iozzi, 1978).

Student Survey

The Student Survey is designed to collect demographic information considered as possible alternative explanations for the variance in the dependent variables (Appendix C). Developed by the investigator, the survey solicits information in three categories:

1) General Information (age, sex, race, family income, type of residence, size of residence, parents' occupations),

2) Educational Background (grade, years in present school system, course, science classes completed, environmentally related experiences), and

3) Religious Background (degree of involvement, years of involvement, religious affiliation, religious activities, parents' religious involvement). In each of the 18 items, the respondent was asked to check the appropriate descriptive selection(s).

The Student Survey was submitted to a panel of five graduate students and university faculty for review. After modifications, the instrument was approved for use in the study.

Conditions of Testing

Testing of subjects took place between January 18 and February 26, 1982. Tests were administered by teachers in required senior history classes. Complete verbal instructions for administering the tests were provided in the teacher's packet (Appendix B) to control variability between testers. Tests were color coded (DIT pink, EIT yellow, Student Survey blue and green) to facilitate test administration.

On the first day of testing, each student received a coded packet containing a copy of the Student Survey, DIT and EIT. Numerical codes from 1000 to 1999 were assigned to private school packets, and from 2000 to 2999 to public school packets. Answer sheets for private schools were printed on blue paper and answer sheets for public schools on green paper.

Student names appeared only on the outside of the packet envelope to ensure that the student would receive the same packet for both test sessions. At the end of the second day of testing, packets were discarded and only test forms, affixed with an enclosed clasp, collected by the teacher for analysis by the investigator. In this way, student anonymity was maintained.

The Student Survey and DIT were administered on one day and the EIT on the other day. Testing order was randomly assigned to the first school, and alternated in successive schools to control the test effect.

Although the tests were not timed, testing was completed in two 45-minute sessions on successive days. When requested by the school administrator, a letter to the parents was sent home with participating students to inform them of the nature of the investigation and testing. Because of the nature of the study, Human Subjects forms were waived.

Although cooperation with the testing probram could not be required, all students in involved classes were expected to participate. Students absent during all or part of the testing schedule completed the tests on subsequent days under the direction of the teacher.

Data Analysis

Results of the Student Survey, DIT and EIT were coded for computer analysis. The Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975) was used to analyze the data. Significance levels were set at $p \leq .05$.

Data transformation was performed where necessary to meet the specifications of the SPSS programs. Science classes, environmentally-related experiences and religious activities were converted to dichotomous variables for each classification, and a total number of classifications for each category was tabulated and entered as part of the data. To test for group influences using t-tests, multi-level variables were collapsed into two groups for comparison of means. For multiple regression, nominal level data was dichotomized and entered into the list of predictors as dummy variables.

All data analysis was performed using the Baker Systems Computer Laboratory at The Ohio State University.

The following analysis of data was completed:

1) descriptive statistics, including frequency distributions, means, medians, standard deviations and skewness for information gathered on the Student Survey concerning

independent variables, using SPSS subprogram FREQUENCIES;

2) a correlation matrix to compare the dependent variables (DIT and EIT scores) with the independent variables, using SPSS subprogram PEARSON CORR; and

3) tests of significance and correlation for hypotheses 1 through 5 using SPSS subprograms T-TEST and PEARSON CORR. For hypotheses 1 and 2, independent sample groups private and public schools were tested for significance of mean DIT and EIT P scores using _t_-tests.

For hypotheses 3 and 4, religious involvement was measured by four predictors:

a) degree of involvement in organized religious institutions (students rated themselves as very active, active, occassionally active or not involved in religion),

b) years of involvement in organized religious institutions,

c) total religious involvement, or the total number of religious activities in which the individual participates regularly, and,

d) religious affiliation.

Significance between variable group mean DIT and EIT scores was determined using _t_-tests. The one-tailed test of significance was used when there was a priori reason to suspect a direction in the relationship between variables. The two-tailed test was used when no a priori indication of the directionality of the relationship between variables was evident in the literature. The strength of the relationship between variables was analyzed using the Pearson product-moment correlation.

For hypothesis 5, the strength of the relationship between mean P scores on the DIT and EIT were correlated using Pearson's correlation.

4) Stepwise multiple regression was used to test hypotheses 6 and 7. The dependent variables were DIT and EIT P scores. Independent variables were sex, income, religious involvement, type of school, course of study, years in the school system, total science courses and environmentally-related experiences. Based on examination of the variance levels ($\underline{R}^2$ change) in preliminary regression runs, criteria were established for the inclusion of variables in the regression equation.

The maximum number of variables to be entered into the equation (n) was set at 10. Based on degrees of freedom, the acceptable $\underline{F}$ ratio of a variable is the value ($\underline{R}^2$) that would result if that variable were included into the equation on that next step. The default value, $\underline{T} = .001$, was accepted for tolerance, the third parameter, which is the proportion of the variance of the dependent variable not explained by the independent variables already in the equation (Nie, et al., 1975).

Summary

An ex post facto study was conducted in an attempt to determine if personal factors, educational background and religious background influence the level of moral decision-making in students. The sample was drawn from selected Columbus private and public schools. Three instruments, a Student Survey of demographic information, the Defining Issues Test and the Environmental Issues Test, were administered to the sample. Data collected was analyzed by computer to provide descriptive statistics for the sample, significant correlations between and among dependent and independent variables, and a regression analysis of the predictors of the dependent variables.

CHAPTER IV

Analysis of Data

Introduction

A sample of 168 high school seniors in four selected northwest Columbus high schools (3 private, 1 public) were involved in the study. After the elimination of incomplete and inconsistent tests, a sample of 130 students remained for analysis (Table 3).

TABLE 3

Schools Used in the Sample

School	No. of Students Tested		No. of Tests Eliminated	No. of Tests in Study
Public One	92		14	78
Private One	22	76	0	22
Private Two	45		18	27
Private Three	9		6	3
TOTAL	168		38	130

The purpose of this chapter is to construct a statistical model based on the analysis of data collected from this sample. The data will be presented in three sections:

1) descriptive statistics (frequencies, percentages and means) for the sample gathered on the Student Survey;

2) testing of hypotheses 1 through 5 based on statistical tests (Pearson's correlation and $\underline{t}$-tests); and

3) regression analysis and testing of hypotheses 6 and 7 to determine the best predictor variables and to determine the increment of change in variation (increase in $\underline{R}^2$) of each of the dependent variables attributable to each independent variable.

Descriptive Statistics

The demographic information concerning the population sample presented in this section was collected with the Student Survey. Information was gathered in three categories:

Part I: General Information

Part II: Educational Background

Part III: Religious Background

Results were compiled and analyzed using the SPSS subprogram FREQUENCIES. Variables listed in each section, coded values and value labels are summarized in Appendix A.

Table 4 shows that the sample was predominantly white (96.2%). Annual family earnings were estimated at over $20,000 by 78.5 percent of the students tested. Most resided in a single family dwelling (90.8%) on a lot less than one acre in size (85.4%). Nearly half (48.5%) had fathers occupied in business or industry, and the majority (66.9%) reported that mothers worked at least part time. Education was the leading occupation for mothers of students involved in the study, comprising 24.6 percent of the total sample.

TABLE 4

Personal Demographic Information of the Sample

Variable	Level	Frequency[a] (n = 130)	Percent (%) of Sample[b]	Mean	Standard Deviation
Age	15	1	0.8	17.3	.5
	16	2	1.5		
	17	79	60.8		
	18	48	36.9		
Sex	M	72	55.4		
	F	58	44.6		
Race	White	125	96.2		
	Non-White	5	3.8		
Income	(1) Below $10,000	1	0.8	3.8	1.9
	(2) $10-$20,000	12	9.2		
	(3) $20-$30,000	26	20.0		
	(4) $30-$40,000	23	17.7		
	(5) $40-$50,000	20	15.4		
	(6) Over $50,000	33	25.4		
Residence	Apartment	2	1.5		
	Condominium	8	6.2		
	House	118	90.8		
	Farm	1	0.8		
Urbanization	No Yard	5	3.8		
	< .25 Acre	37	28.5		
	.25-1 Acre	74	56.9		
	1-5 Acres	11	8.5		
	More than 5 Acres	3	2.3		

TABLE 4 (Continued)

Variable	Level	Frequency[a] (n = 130)	Percent (%) of Sample[b]	Mean	Standard Deviation
Father's Occupation	Business	50	38.5		
	Self-Employed	24	18.5		
	Education	16	12.3		
	Industry	13	10.0		
	Government	8	6.2		
Mother's Occupation	Housewife	43	33.1		
	Education	32	24.6		
	Business	20	15.4		
	Health	13	10.0		

[a] Where numbers do not total 130, information was not available.

[b] Where percent does not total 100, only major variable levels were listed.

The educational background of the sample is summarized in Table 5. Of the 130 students making up the sample, 60.6 percent attended public schools. Students were predominantly engaged in college preparatory curricula (80.8%). Over half of the students had completed earth science, general biology and/or chemistry courses. The mean number of high school level science courses taken was 2.68. Subjects reported participation in an average of 1.32 environmentally-related experiences such as resident outdoor education (44.6%) and camps (66.9%).

TABLE 5

Educational Background of the Sample

Variable	Level	Frequency[a] (n = 130)	Percent (%) of Sample[b]	Mean	Standard Deviation
School Type	Private	52	40.0		
	Public	78	60.0		
Course	College Prep.	105	80.8		
	General	20	15.4		
	Vocational	4	3.1		
Total Environmentally-Related Experiences	0	28	21.5	1.32	.92
	1	44	33.8		
	2	48	36.9		
	3	9	6.9		
	4	1	0.8		
Environmentally-Related Experiences	Resident Outdoor Education	58	44.6		
	Camp	87	66.9		
Total High School Science Courses Completed	0	2	1.5	2.68	.16
	1	21	16.2		
	2	31	23.8		
	3	45	34.6		
	4	25	19.2		
	5	5	3.8		
	6	1	0.8		

TABLE 5 (Continued)

Variable	Level	Frequency[a] (n = 130)	Percent (%) of Sample[b]	Mean	Standard Deviation
Science Courses Completed	Earth Science	97	74.6		
	General Biology	106	81.5		
	Advanced Biology	8	6.2		
	Chemistry	81	62.3		
	Physics	32	24.6		
	Other	23	17.7		

[a] Where numbers do not total 130, information was not available.

[b] Where percents do not total 100, only major variable levels are included.

Table 6 records information on the religious background reported by the student sample. Although 90.1 percent were, for the purposes of this study, classified as part of the Judeo-Christian tradition (Protestant, Catholic or Jewish), the sample was predominantly Protestant (73.1%). Less than five percent identified no religious affiliation. The sample was dichotomous in terms of religious involvement. Almost half (48.5%) rated themselves as not involved or occasionally involved in their religion while the remaining 51.5 percent classified themselves as active or very active. Sixty-seven percent claimed involvement in organized religion for more than five years, while 48.5 percent of the total sample cited over ten years of religious involvement. Of the list of seven religious activities presented, the sample reported a mean involvement in 2.25 of them.

TABLE 6

Religious Background of the Sample

Variable	Level	Frequency[a] (n = 130)	Percent (%) of Sample[b]	Mean	Standard Deviation
Religious Affiliation	Protestant	95	73.1		
	Catholic	21	16.2		
	Jewish	1	0.8		
	Other	4	3.0		
	None	6	4.6		
Degree of Involvement	(1) Not Involved	20	15.4	2.58	.99
	(2) Occasionally	43	33.1		
	(3) Actively	39	30.0		
	(4) Very Active	28	21.5		
Years of Religious Involvement	None	12	9.2		
	Less than 1	4	3.1		
	1 - 2	10	7.7		
	3 - 5	17	13.1		
	5 - 10	24	18.5		
	More than 10	63	48.5		
Total Religious Activities	0	22	16.9	2.25	1.66
	1	32	24.6		
	2	18	13.8		
	3	22	16.9		
	4	25	19.2		
	5	9	6.9		
	6	1	0.8		
	7	1	0.8		

[a] Where numbers do not total 130, information was not available.

[b] Where percents do not total 100, only major variable levels were listed.

Testing of the Null Hypotheses

To examine the influence of religious background and school philosophy on the individual's level of moral decision-making in societal and environmental areas, seven research hypotheses were developed. For the purpose of statistical analysis and testing, these were restated and treated as null hypotheses.

The null form of hypotheses 1 and 2 are as follows:

> Null Hypothesis 1: There will be no significant difference ($p \leq .05$) between the mean P score on the Defining Issues Test (DIT) of students in private and public schools. That is, there will be no significant difference between the relative importance attributed to principled moral considerations in general social issues by seniors in public and private high schools.

> Null Hypothesis 2: There will be no significant difference ($p \leq .05$) between the mean P score on the Environmental Issues Test (EIT) of students in private and public schools, that is, there will be no significant difference between the relative importance attributed to principled moral considerations in environmental issues by seniors in public and private high schools.

Because data for these two hypotheses was classified into two groups (public and private high schools), the *t*-test was used to test for significant differences in group means. The SPSS subprogram, T-TEST, was utilized in the computer analysis. *F* tests which tested the equality of variance for the two groups were not significant and the variances of the two groups were assumed to be equal.

Results of the *t*-tests (Table 7) showed no significant difference ($p \leq .05$) between the mean DIT P scores of senior students in private and public schools. There was, however, a significant difference ($p \leq .05$) between the mean EIT scores of students in private and public schools. Pearson's correlation coefficient (r) for EIT score and school type was .20. Mean scores on both tests were higher for public than private school students.

TABLE 7

T-Test Results for School Type

	School Type	Frequency	Mean	Standard Deviation	T-Value	p
DIT	Private	52	28.52	14.08	-0.79	.43
P score	Public	78	30.51	14.20		
EIT	Private	52	36.65	12.77	-2.36	.02*
P score	Public	78	42.48	14.47		

*$p \leq .05$

Based on this analysis of data, null hypothesis 1 was not rejected, while null hypothesis 2 was rejected.

The null form of hypotheses 3 and 4 are as follows:

> *Null Hypothesis 3*: There will be no significant correlation ($p \leq .05$) between the mean P score on the DIT and the degree of religious involvement.

Null Hypothesis 4: There will be no significant
correlation ($\underline{p} \leq .05$) between the mean P score
on the EIT and the degree of religious involvement.

For the purposes of this study, degree of religious involvement was measured by four variables:

1) degree of involvement in organized religious institutions as reported by student self evaluation to be very active, active, occasionally active or not involved;

2) years of involvement in organized religious institutions;

3) total religious involvement, the total number of religious activities in which the individual participated regularly and;

4) religious affiliation.

TABLE 8

T-Test Results for Religious Involvement and Affiliation

	Variable	Group	N	Mean P Score	Standard Deviation	T-Value	P
DIT P Score	Degree of Involvement	Not or Occasionally	63	28.93	13.45	-0.61	.54
		Active or Very Active	67	30.44	14.81		
	Religious Affiliation	None	6	38.33	16.41	1.50	.14
		Judeo-Christian	117	29.45	14.04		
EIT P Score	Degree of Involvement	Not or Occasionally	63	41.36	13.95	0.96	.34
		Active or Very Active	67	39.01	14.18		
	Religious Affiliation	None	6	36.33	14.72	0.58	.56
		Judeo-Christian	117	39.79	14.19		

In order to determine if mean DIT and EIT P scores differed significantly ($p \leq .05$) for the variables "degree of religious involvement" and "religious affiliation," levels of the variables were collapsed into two groups. Analysis using the SPSS subprogram T-TEST showed no significant ($p \leq .05$) difference between subjects not involved or occasionally involved with a religious institution and those actively or very actively involved on either the DIT or EIT test. No significant ($p \leq .05$) difference was found between mean DIT or EIT test scores for groups having no religious affiliation as compared to Judeo-Christians (Table 8).

TABLE 9

Correlations for Years of Involvement and Activities

Variable	DIT r	DIT p	EIT r	EIT p
Years of Religious Involvement	-.04	.68	-.09	.31
Total Religious Activities	.12	.17	-.02	.84

Though not significantly different at the .05 level because of the large difference in the cell sizes, the mean DIT P score for those claiming no religious affiliation was considerably higher (8.88 points) than for the Judeo-Christians.

This difference was significant at the .15 level. Religiously active students scored slightly higher (1.51 points) on the DIT than less active students. The reverse in both variables is seen with the comparison of mean EIT scores: low religious involvement scored 2.35 points higher, and Judeo-Christians scored 3.46 points higher than those with no religious affiliation.

DIT and EIT P scores did not correlate significantly ($p \leq .05$) with either the variable for years of religious involvement or total number of religious activities (Table 9) when analyzed using SPSS subprogram PEARSON CORR. All correlations in these categories were negative except the correlation between DIT score and total religious activities. This correlation (.12) was significant at the .20 level.

On the basis of these analyses, neither null hypotheses 3 or 4 was rejected.

The null form of hypothesis 5 is as follows:

> Null Hypothesis 5: There will be no significant correlation ($p \leq .05$) between the P scores on the DIT and EIT.

T-Tests of significance between independent groups showed consistently higher mean P scores on the EIT than on the DIT (Table 10).

TABLE 10

T-Test Comparisons of DIT and EIT Mean P Scores

Variable	Level	Mean DIT P Score	Mean EIT P Score	(EIT-DIT)
Degree of Religious Involvement	Low	28.9	41.4	12.5
	High	30.4	39.0	8.6
Religious Affiliation	None	38.3	36.3	-2.0
	Judeo-Christian	29.4	39.4	10.0
School Type	Private	28.5	36.7	8.2
	Public	30.5	42.5	12.0

Analysis using SPSS subprogram PEARSON CORR showed a highly significant correlation ($p \leq .001$) between DIT and EIT P scores. Pearson's correlation coefficient (r) was .50. The positive r value indicates a direct relationship between the P scores on the two tests, i.e., as one increases, the other does also. On the basis of this analysis, null hypothesis 5 was rejected.

Correlations between and among variables are summarized on Table 11. The independent variables total number of science courses taken, earth science, chemistry, physics and EIT P score correlated significantly ($p \leq .05$) with DIT P score. All were positive correlations, suggesting that increases in these variables were related to an increase in DIT P score.

Significant ($p \leq .05$) correlations with EIT P score were school type, earth science, mother's religious involvement and DIT P score. The direct relationship between school type and EIT score indicated by the positive r value suggests higher EIT scores for public school than for private school students. The negative correlation with mother's religious involvement implies an inverse relationship. This suggests that high religious activity on the part of the mother tends to suppress the EIT P score.

TABLE 11

Variable Correlations with DIT and EIT P Scores

Variable	*r* with DIT	*p* with DIT	*r* with EIT	*p* with EIT
GENERAL INFORMATION				
School Type	.07	.43	.20	.02*
Age	-.03	.76	-.03	.71
Sex	.01	.94	.15	.08
Race	.02	.85	-.06	.54
Income	.08	.42	.12	.22
Residence Type	-.13	.13	-.03	.69
Residence Size	-.01	.90	.03	.70
EDUCATIONAL BACKGROUND				
Years in Present School	.01	.93	.05	.60
Course	-.14	.10	-.15	.10
Total Science Courses	.28	.001***	.15	.08
Earth Science	.23	.01**	.17	.05*
General Biology	.12	.18	.04	.62
Advanced Biology	-.08	.38	-.01	.90
Chemistry	.19	.03*	.07	.45
Physics	.21	.02*	.13	.14
Other	.03	.72	-.07	.40
Total Environmentally-Related Experiences	.16	.08	.14	.12
Resident Outdoor Edu.	.06	.54	.01	.96
Int'l Field Studies	.16	.08	.14	.12
Youth Conservation Corps	.03	.72	.16	.07
Camp	.08	.35	.03	.75
Other	.09	.33	.16	.07

TABLE 11 (Continued)

Variable	r with DIT	p with DIT	r with EIT	p with EIT
RELIGIOUS BACKGROUND				
Degree of Religious Involvement	.04	.63	-.05	.54
Years of Religious Involvement	-.04	.68	-.09	.31
Total Religious Activities	.12	.17	-.02	.84
Worship Service	.16	.06	.06	.44
Sunday School	.03	.75	-.16	.06
Cathechism	-.01	.87	.12	.16
Youth Activities	.01	.93	-.02	.79
Bible Study	.06	.52	-.09	.31
Church Camp	.09	.26	-.01	.98
Other	.03	.70	.03	.75
Father's Religious Involvement	.06	.54	-.02	.77
Mother's Religious Involvement	-.08	.36	-.18	.05*
DIT Score	1.00	-	.50	.001***
EIT Score	.50	.001***	1.00	-

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Regression Analysis and Testing of Null Hypotheses 6 and 7

Forward (stepwise) multiple regression using SPSS subprogram REGRESSION was used to test hypotheses 6 and 7. The null form of hypotheses 6 and 7 are as follows:

> Null Hypothesis 6: There are no significant ($p \leq .05$) predictors or combinations of predictors of DIT P score from the variable list: EIT P score, educational background, religious background and personal factors.
>
> Null Hypothesis 7: There will be no significant ($p \leq .05$) predictors or combination of predictors for EIT P score from the variable list: DIT P score, educational background, religious background and personal factors.

In the regression analysis using DIT P score as the dependent variable, three predictor variables were identified as significant within the specified parameters ($p \leq .05$, $F \geq 2.5$) (Table 12). Judeo-Christian religious affiliation, significant at the .10 level ($F = 2.17$), correlated negatively with DIT score. Of the three statistically significant variables, 28 percent (R^2 change) of the variability in DIT score was attributed to a single predictor, EIT score. The combined effect of the three predictors accounted for 36 percent (R^2) of the variability in DIT score, leaving 64 percent of the variability in DIT score unexplained by the variables under study.

While EIT score and total science courses correlated positively with DIT score, religious affiliation correlated negatively, indicating that the latter suppressed the DIT score. This suggests that prediction of the DIT P score is enhanced by information about a student's EIT score, science courses and religious affiliation. Specifically, it appears that the higher the EIT score, the more science courses taken, and the absence of religious affiliation would predict a high DIT P score.

TABLE 12

Regression Analysis for DIT P Score

	Variable	Simple R	Multiple R	R^2	R^2 Change	F^a
With EIT P Score	EIT P Score	.53	.53	.28	.28	48.34***
	Total Science Courses	.29	.58	.33	.05	7.66***
	Religious Affiliation	-.14	.60	.36	.02	4.73**
Without EIT P Score	Total Science Courses	.29	.29	.09	.09	13.22***
	Mother's Religious Involvement	-.11	.33	.11	.02	3.03*

[a] F values reported are those for the individual independent variables.

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Because EIT score was such a dominant predictor, a regression analysis was performed without EIT Score entered as an independent variable. Two predictor variables were listed within the specified parameters ($p \leq .05$) (Table 12). No other variables were significant at the .10 level. A total of 11 percent (R^2) of the variability in DIT score was explained by the two significant variables. The majority (9%) was due to total science courses. A negative correlation (simple R) was reported for the variable religiously active mother, suggesting that active and very active religious involvement on the part of the mother seemed to have a negative effect on the student's general moral development.

The statistics recorded on Table 12 are illustrated in Figure 1.

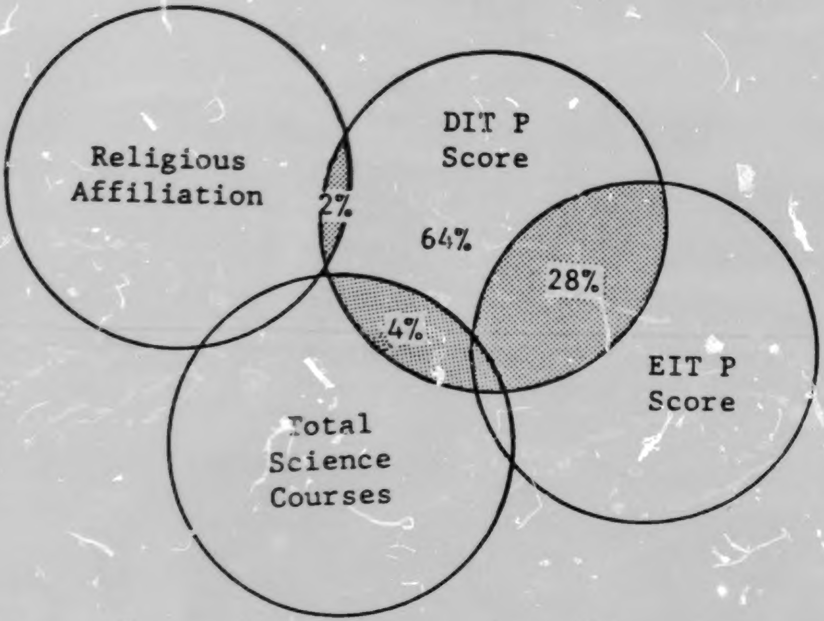
Religious Affiliation
DIT P Score
2%
64%
28%
4%
EIT P Score
Total Science Courses

FIGURE 1

Predictors of DIT P score

Regression analysis for the dependent variable EIT P score indicated five variables that were statistically significant ($\underline{p} \leq .05$) (Table 13). No additional variables were significant at the .10 level. A total of 39 percent ($\underline{R}^2$) of the variability was attributed to these five significant variables, 28 percent being due to DIT P score alone. The remaining four predictors each accounted for two or three percent of the EIT variability. All variables correlated positively with EIT score except Judeo-Christian affiliation. Therefore, prediction of

EIT P score is enhanced by information about a student's DIT P score, type of school, religious affiliation and sex. Specifically, it suggests that a female student attending a public school, whose religious affiliation is other than Judeo-Christian, and who scores high on the DIT will have a high EIT P score.

TABLE 13

Regression Analysis for EIT S Score

	Variable	Simple R	Multiple R	R^2	R^2 Change	F^a
With DIT P Score	DIT P Score	.53	.53	.28	.28	55.81***
	Public School	.22	.56	.31	.03	5.84***
	Religious Affiliation	.07	.59	.34	.03	9.42***
	Female	.16	.61	.37	.02	4.85***
	Judeo-Christian	-.07	.62	.39	.02	3.75**
Without DIT P Score	Public School	.22	.22	.05	.05	7.97***
	Female	.16	.28	.08	.03	4.59**
	Total Science Courses	.15	.33	.11	.03	3.69*

[a] F values reported are for the individual independent variables.

*$p \leq .05$

**$p \leq .01$

***$p \leq .001$

The regression analysis without DIT P score entered as a variable yielded three predictors significant at the .05 level and explained a total of 11 percent of the variability. No additional variables were significant at the .10 level. The variable public school explained five percent ($\underline{R}^2$ change) of the dependent variable in this equation. All correlations were positive.

The regression statistics on Table 13 are diagrammatically shown on Figure 2.

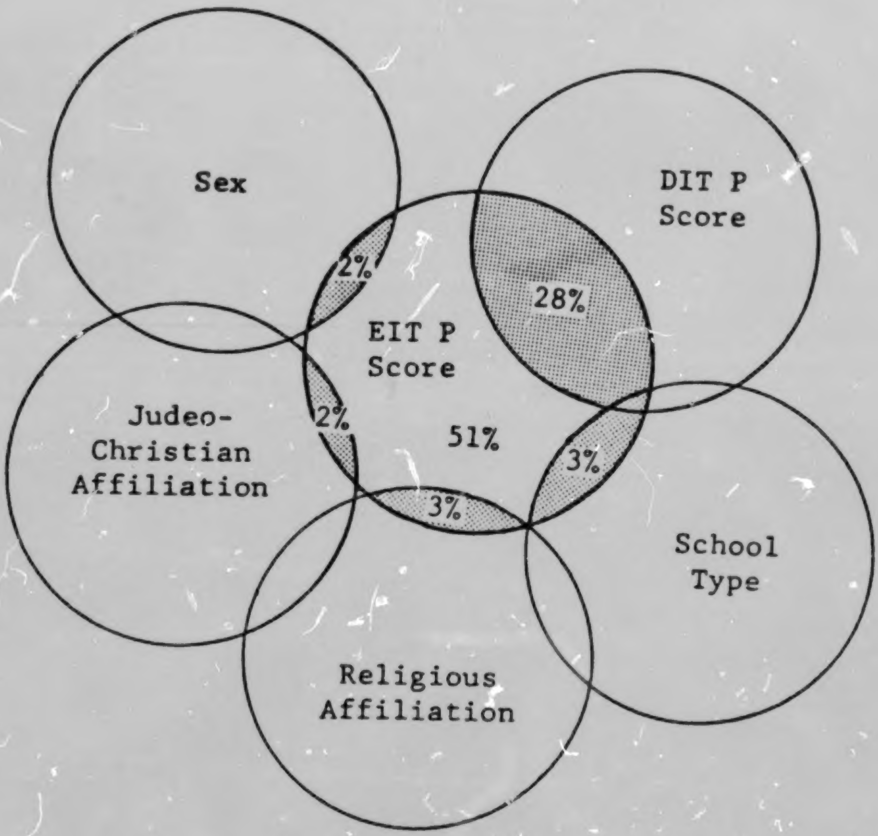
Sex
DIT P Score
EIT P Score
Judeo-Christian Affiliation
School Type
Religious Affiliation
2%
28%
2%
51%
3%
3%

FIGURE 2

Predictors of EIT P Score

On the basis of these regression analyses, null hypotheses 6 and 7 were rejected, as significant ($p \leq .05$) predictors of both DIT and EIT P score were evident.

Summary

Of the independent variables measured, the variables that correlated significantly ($p \leq .05$) with DIT P score were total number of science courses taken, earth science, chemistry, physics and EIT P score. All were positive correlations. Significant correlations ($p \leq .05$) with EIT P score were school type, earth science, mother's religious involvement and DIT P score. All were positive correlations except the level of mother's religious involvement.

Forward (stepwise) inclusion of variables in a multiple regression equation for DIT P score identified EIT P score, total number of science courses, and religious affiliation as the best predictors, the latter having a negative effect. Together, these variables accounted for 36 percent of the variability in the DIT score. EIT score alone explained 28 percent of the variability in the DIT score. EIT score alone explained 28 percent of the variability in the DIT score.

The multiple regression analysis listed five variables within the specified parameters as predictors of EIT P score. DIT P score, public school, religious affiliation and female sex apparently enhanced EIT score, while Judeo-Christian affiliation tended to suppress it. DIT P score accounted for most (28%) of the 39 percent variability explained by these predictors.

Table 14 summarizes the tests of null hypotheses performed.

TABLE 14

Results of Tests of Null Hypotheses

Null Hypothesis 1	Not Rejected
Null Hypothesis 2	Rejected
Null Hypothesis 3	Not Rejected
Null Hypothesis 4	Not Rejected
Null Hypothesis 5	Rejected
Null Hypothesis 6	Rejected
Null Hypothesis 7	Rejected

CHAPTER V

Conclusion

Summary

This study determined if variables in the individual's personal, educational and religious backgrounds influence the level of moral decision-making in general societal specific environmental areas. The study focused on private and public schools as measures of school philosophy and on religious involvement, as measured by religious affiliation, degree and years of involvement, and total religious activities.

One hundred and thirty high school seniors from four Columbus area schools comprised the sample under study. Three instruments were used to gather data: a Student Survey, the Defining Issues Test and the Environmental Issues Test. Results were analyzed using descriptive statistics concerning the population, t-tests and Pearson's correlation coefficient, and multiple regression analyses.

The conclusions, based on the results of these computer analyses, are presented in this chapter. Discussion of the significance of the findings will be presented in four areas related to the sample:

1) personal background,
2) educational background,
3) religious background, and
4) test instruments.

Discussion

Personal Background.--Because of the nature of the sample, significant variation on multiple levels of many of the personal-demographic variables was not evident. Because these variables (age, race, residence and degree of urbanization) were relatively constant throughout the sample, their effect on the dependent variables was not expected to be significant.

Of the personal variables tested, no significant correlations were found with DIT and EIT test scores. The lack of correlation between DIT score and income appears to be contrary to Kohlberg's findings that moral development occurs faster in children of higher socioeconomic status (Hash, 1975). The dichotomy within the sample on the variable "income" may not have been as drastic as in Kohlberg's study. Kohlberg compared middle class children with urban lower class children, and urban lower class children with village lower class children.

The former in each set showed higher levels of development.

In this study, the urbanization factor was relatively constant and the income level varied. This may suggest that the degree of urbanization is as important as socioeconomic status in moral development. Leopold (1949) suggested a strong link between urbanization and level of environmental decision-making. The need exists for further study in this area.

Educational Background.--Several educationally significant conclusions can be drawn from this study that have implications for environmental educators. The first is that, based on the frequencies compiled from the Student Survey, high school seniors have been exposed to few institutionalized environmentally-related experiences such as camps, resident outdoor education, field studies and conservation-based jobs. In the schools sampled, seniors reported participation in only 1.32 environmentally-related experiences as part of their education. Most of these had attended camps (66.9%), 21 percent of which were church camps. It is not known if these camps included a strong environmental emphasis in their programming. About 45 percent of the students reported participation in resident outdoor education. Education and school programs were a high economic priority in the districts sampled. If students in less affluent and less educationally-oriented areas could report as much participation in environmentally-related experiences as the students samples is open to question.

Participation in institutionalized environmentally-related experiences correlated significantly at the .10 level ($\underline{r}$ = .16) with DIT score and at the .15 level ($\underline{r}$ = .14) with EIT score (Table 11). Because of the low number of participating students, generalizability from the statistics is questionable. Yet environmentally-related experiences could potentially impact environmental ethics. The findings of this study indicate that the response to and the effectiveness of these experiences, especially camp programs, are areas open to further study.

If the sole environmental exposure of such a high percentage of students is at camps, it is vital that qualified environmental educators tap this resource. Solid programs, based on developmentalist theory and aimed at various levels, should be developed and made available to camp staff. The materials should be easy to implement by the non-environmental or non-educators that generally constitute the camp staff. They must not be elaborate or expensive to present. Finally, the programs must consist of more than the cognitive coldness of identifying trees and putting meaningless drops into colorless water samples. They must have at the core of their objectives a strategy to develop the environmental decision-making ability of the students.

Other implications for education apply to the more traditional classroom setting. The analysis indicates that the science curriculum is somewhat impacting socio-moral development. Correlation between DIT score and total science courses taken was .28 ($p \leq .001$). Based on the correlation between EIT score and total science courses taken, this does not appear to be true in the environmental-moral realm ($p = .08$, $r = .15$). Of the science courses investigated (earth science, biology, advanced biology, chemistry and physics), only earth science correlated significantly ($p \leq .05$) with DIT and EIT scores (Table 11). Although 81.5 percent of the seniors had taken at least one biology course, this was the only science level that did *not* correlate significantly at the .05 level with either the DIT or the EIT P score. This is surprising in that biology is the ideal arena for discussions related to social- and environmental-moral issues. The study seems to indicate that the life sciences have not effectively addressed the affective and values realms. In a decade in which scientific advances are bringing bioethics to the forefront, this seems a drastic example of negligence. As Miles (1977) stated, the field is apparently ripe for the inclusion of developmentalist moral education strategy in science curriculum.

In environmental science curriculum, a need exists to identify and define dilemmas with inherent moral implications at each grade or stage within the environmental context. For example, on the elementary level, the implications of keeping an animal a child has captured or releasing it can be explored. The discussion can teach respect for life as well as the human responsibility of stewardship toward the rest of nature. This is a solid foundation for parallel but progressively more complex dilemmas in later years--landfill and development in estuaries, for example--that are complicated by political and economic considerations.

As Ryan (1981) points out, the hidden curriculum is the most effective realm of education. Even untrained teachers can act as environmental and moral educators here. They key is flexibility: pausing to draw attention to and discuss the moral implications inherent in most areas of education, pre- and post-discussions of experiments, fieldtrips, television shows and movies that make value statements, and plus-one modelling.

Although private schools generally claim to be utilizing the hidden as well as conscious curriculum to stimulate moral development, results of this study show no significant ($p \leq .05$) differences between the general moral development of students in public and private schools. If private schools are not providing an educational system and environment different from that of the public schools as is claimed, there are economic ramifications. Are the children and parents associated with private schools getting the type of education they are paying for? Should private schools be given government aid, or parents involved receive tax credits? Should churches invest sizable amounts of money to sponsor private schools?

Public school students demonstrated a significantly higher ($p \leq .05$) mean EIT P score than private school students. The educational implications of this are that environmental issues apparently are discussed more openly or in a moralistic way in public schools. There was, however, a greater difference between the EIT and DIT scores in public than in private schools (12 points as compared to 8.2 points, see Table 10). This is consistent with Ryan's (1981) assertion that public schools stress values neutrality. A considerably higher EIT score would suggest more freedom of discussion and confrontation of moral issues associated with the environment, a relatively neutral sphere, than of general social moral issues, which carry much greater valence. As previously discussed, however, this moral confrontation does not appear to be taking place within the science curricula.

The fact that EIT P scores were consistently higher than DIT P scores over most groups (Table 10) may have implications for education and developmentalist theory. If moral development is general, one would expect EIT and DIT scores to parallel closely. The correlation of the two P scores would be high. The .50 correlation ($p \leq .001$) between DIT and EIT scores and the consistently higher EIT scores found in this study may indicate that moral development is not general, but context specific. Although general moral development may be a prerequisite for environmental moral development, it does not explain the whole of environmental moral development. Kohlberg (1981) and Fowler (1976) have drawn a similar conclusion about the relationship between the levels of general moral development and the development of religious thinking. Various experiences and factors may stimulate moral development in an individual in one area, while another unstimulated area remains on a lower level. Further analysis of test results on the basis of stage scores at all levels rather than P scores might shed light on this theoretical question.

Religious Background.--The lack of significant difference in DIT and EIT scores between poles on the four predictors of religious involvement seems to indicate that, contrary to assertions from White and Nash, Judeo-Christian traditions do not appear to have a major negative influence on moral decision-making regarding society or the environment. It also suggests that Judeo-Christianity has not as yet taken up the calls by Schaeffer and Dobel for the church to set the proper ecological precedent.

If the responsibility for environmental education rests on the church (Nash, 1981), and if the proper theological-ecological base is provided therein (Schaeffer, 1970; Dobel, 1977), then environmental educators should be apprised of this potential. Although, based on this study, the strength of the church's influence in environmental areas is open to question, this may not be globally true. In developing countries, for example, religious leaders often have more influence at the "grassroots" level--the level which effective environmental education addresses--than does the education system. Such educational systems often have little universal audience or environmental emphasis. The legislative system is often unstable and deals predominantly with political issues deemed more important than environmental issues. Religious leaders presenting environmental concepts could be the most effective approach.

Also in the study, it may be theologically significant that, while mean P scores for those with no religious affiliation were about the same on the DIT and EIT (38.3 and 36.3 respectively), mean scores for those of the Judeo-Christian tradition were considerably different (29.4 on the DIT and 39.4 on the EIT). This may illustrate legalistic Stage 3 thinking in social-moral issues characteristic of the conservative church. An unquestioning respect for authority, rules and principles established by institutions is typical of these stages. According to Fowler's chronology (1976), most religious high school seniors would be at the stage of faith in which principles and teachings of the church and religious leaders would dictate the "right" thing to do in a social-moral setting.

The higher EIT score for these religious seniors may indicate that the dictates of the church have not been applied as specifically to the environmental context, thus higher moral stage thinking (Stage 4 and perhaps Stage 5), often seen in high school seniors, is evident in this area. As no precedents in environmental areas have been proclaimed by the religious institution, development in the environmental-moral area may have been stimulated by exposures through school and the media, resulting in a more universal philosophy about "right" attitudes toward the environment and hence a higher EIT score.

Legalistic religious thinking may also explain the lower DIT and EIT scores for students in private schools. While the approach to moral issues in a values neutral public school is to present various ideas and allow the student to decide what is morally proper, the private schools would not aspire to this methodology. Rather, the approach is to present rules, principles and/or absolutes as the basis of moral decision-making. If presented as inflexible and not discussed as to their ramifications in relation to the individual's world-view, these codes perpetuate or further crystallize the student at the concrete (Stages 3 and 4) level of reasoning. The concrete level of thinking is typical of junior high students, but high school students often move into the level of abstract reasoning. The shift is due to challenges of rules and principles, causing the student to reexamine and accept, modify or reject the codes.

The results of this study seem to indicate that the challenges to principles instilled in younger years that are vital to the student's progress toward formal, inductive thinking are lacking in the private schools sampled. A basic contention of the private schools included in the study is that their hidden and conscious curricula are stimulating moral development. It appears that even if development to Stage 4 occurs more quickly, the student is not challenged to the succeeding abstract level and may stop at the concrete level, at least temporarily.

Numerous reinforcers of concrete thinking appear in schools: self-paced curricula which stress one "right" answer rather than supporting an answer with the reasoning processes behind it characteristic of the open discussion approach; highly objective tests which evaluate rightness of response rather than rightness of reasoning; rules that are announced but not discussed or explained.

Based on this discussion, educational implications are many, especially for private schools. First, students in the upper grades need to be led to reexamine rules and principles they have held. They need to see the codes in hierarchial relationship, differentiating between absolutes, principles, cultural norms and traditions. Through application of this hierarchy to dilemmas, a consistent and durable worldview useful in moral decision-making can be fostered.

Secondly, the classroom approach must stress individuality (i.e., the applicability of the hierarchy of codes to widely varying life styles and situations) rather than universal conformity to lower levels of the hierarchy. Open discussion should compare and contrast an individual's moral responses to various levels of the hierarchy.

Finally, moral development and abstract level reasoning should be a criterion for teacher employment, especially in schools espousing to stimulate moral development in students. A study of secondary science and social studies teachers showed that over 20 percent of the students sampled had mean P scores at or above the P score of their own teacher (Pierce, Gross and Wilke, 1981). Kohlberg (1981) stressed the importance of plus-one modelling to the development of wise decision-making in students. Further study into comparative levels of moral judgement of private school teachers and their students may help to explain the difference between the private and public school DIT and EIT scores.

Test Instruments.--Alternatively, an overview of comparative DIT and EIT scores (Table 10) implies that in most groups, EIT P scores were considerably higher than DIT P scores. This is probably not due to the test effect, as the order of testing was randomized. It should not be due to the varying length of the instruments (three dilemmas on the DIT compared to five on the EIT) if reports of high (.93) correlations between forms of the DIT test are accepted. It may indicate that assumptions concerning the parallelism of the two instruments are subject to question. The alternative implication--that individuals in nearly all categories are more environmentally than socially aware--is difficult to conceive of or to support.

The EIT and DIT both need revision. The wording and construction of the 12 issue statements accompanying each dilemma are not parallel and are frequently vague, making it difficult to relate the statement back to the dilemma. Furthermore, issues are outdated: school newspaper censorship and school faculty striking over air pollution. The issues clearly reflect social and environmental activism of the 1960s and 1970s, and are sometimes scarcely even believable by high school students of this generation--or so comments on several test forms indicated. To effectively evaluate moral reasoning in a rapidly changing culture, the instruments must regularly and consistently be modified.

The Student Survey should be revised to more reliably gather interval and ratio level data, especially for income, years in present school system and years of religious involvement by adding qualifiers, such as "involved weekly, monthly, or yearly."

Conclusion

Based on this study and the analysis of data collected, it seems that the Judeo-Christian philosophy as exhibited in a private school setting has no significant ($p \leq .05$) effect on the general level of development of moral judgement in senior students. Public school students, however, show significantly ($p \leq .05$) higher levels of decision-making in environmental issues than their private school counterparts. Religious background does not seem to significantly ($p \leq .05$) affect the general or environmental levels of decision-making. None of the personal variables under study seemed to influence the level of development, but the number of science courses taken significantly ($p \leq .05$) correlated with general moral development.

According to regression analyses, certain combinations of factors can predict high DIT and EIT P scores. Of the variables tested, high EIT score, large number of science courses taken and absence of religious affiliation predict a high DIT score. A high EIT score is predicted by a high DIT score, attendance of a public school, religious affiliation other than Judeo-Christian and female sex.

Recommendations

Based on the results and discussion of this study, several recommendations can be made.

1) Further research into variables affecting the level of moral development, especially in an environmental context, is needed. What factors or combination of factors makes up the 64 percent of the variability in DIT score and the 51 percent of the variability in the EIT score unexplained by this study? Degree of urbanization has been suggested as a possibly important variable (Leopold, 1949). Kohlberg found income to be a major factor (Hash, 1975). Non-institutionalized environmental experiences such as family outings, camping and the individual's outdoor-related hobbies should be considered as influential factors. Also, the impact of the media as part of

the individual's leisure time needs to be considered. Research involving these and other variables is recommended.

2) Participation in and the influence of institutionalized environmentally-related experiences is open to further study. Strong environmental education programs and materials need to be developed and refined for use at camps and other centers which young people visit.

3) Social- and environmental-moral issues should be addressed in science courses, especially life sciences. The need exists to define environmental dilemmas useful in moral education at all grades and stages. The need for a flexible, discussion-oriented approach as part of the hidden curriculum is also evident.

4) Nontraditional approaches to environmental education should be explored. One possibility is the involvement of religious leaders and the church as environmental educators, especially in developing countries. Another is the development of programs that address people who, due to economic or other conditions, are locked into the self-interest orientation of Level One. Though Kohlbergians would much prefer that the individual be led to higher levels of moral judgement, this may not always be possible. An example is in developing

countries. There the environment is sometimes exploited in an effort to hurriedly reach the level of industrialization of the West, and sometimes to enable impoverished people to simply survive. In these instances, an "enlightened" self-interest may be an acceptable second choice to stage transformation.

5) The correlation between the Defining Issues Test and Environmental Issues Test should be reexamined. It is recommended that, in further studies involving moral development in the social and/or environmental realms, either new Kohlbergian instruments be developed or the existing instruments be updated to include more contemporary dilemmas that reflect changing issues and values.

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APPENDIX A

Variable Listing

TABLE 15

Variable Listing

Columns	Variable Name	Variable Description	Levels	Code
I. PERSONAL INFORMATION				
1-4	IDNUM	Test code number		1000-2999
5	SCHTYPE	Type of school student attended	private public	1 2
6-7	AGE	Age of Student	15-19, other (specify)	15-19, other (specify)
8	SEX	Sex of Student	Male Female	1 2
9	RACE	Ethnic background of student	White (not Hispanic) Black (not Hispanic) Hispanic Asian American Indian or Alaskan Native Other (specify)	1 2 3 4 5 6

Table 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
10	INCOME	Estimated total annual family income	Below $10,000	1
			Between $10-$20,000	2
			Between $20-$30,000	3
			Between $30-$40,000	4
			Between $40-$50,000	5
			Over $50,000	6
11	RTYPE	Type of Residence	Apartment	1
			Condominium or townhouse	2
			Individual house	3
			Farm	4
			Other (specify)	5
12	RSIZE	Size of property or yard	No yard	1
			Less than ¼ acre	2
			¼ to 1 acre	3
			1-5 acres	4
			Over 5 acres	5

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
13-14	FATHOC	Father's Occupation(s)	Business	01
			Industry	02
			Education	03
			Government	04
			Household Respons.	05
			Religion	06
			Citizen Action	07
			Self Employed	08
			Not Employed	09
			Other (specify)	10
			Health	11
			Engineering	12
			Deceased/divorced	13
15-16	MOTHOC	Mother's Occupation(s)	same as FATHOC	
17	Blank space			

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
II. EDUCATIONAL BACKGROUND				
18-20	YEARSCH	Number of Years in Present School System	1-2	015
			3-4	035
			5-6	055
			7-9	080
			10-12	110
21	COURSE	Course of Study in School	College Preparatory	1
			General	2
			Vocational/Technical	3
22	EARTHSCI	Earth Science	no = 0, yes = 1	
23	GENBIO	General Biology	no = 0, yes = 1	
24	ADVBIO	Advanced Biology	no = 0, yes = 1	
25	CHEM	Chemistry	no = 0, yes = 1	
26	PHYSICS	Physics	no = 0, yes = 1	
27	OTHER	Other	no = 0, yes = 1	

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
28	TOTALSCI	Total number of science courses completed	0-6	0-6
29	ROE	Resident Outdoor Education		no = 0, yes = 1
30	IFS	International Field Studies or comparable fieldwork		no = 0, yes = 1
31	YCC	Youth Conservation Corps		no = 0, yes = 1
32	CAMP	Church, Music, or Other Camp		no = 0, yes = 1
33	OTHER	Other Environmentally-related Experiences		no = 0, yes = 1
34	TOTALEE	Total Number of Environmentally-related Experiences	0-5	0-5
35	Blank			

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
III. RELIGIOUS BACKGROUND				
36	DEGINVOL	Degree of Involvement in Organized Religion	Not involved	1
			Occassionally active	2
			Active	3
			Very active	4
37-39	YRSINVOL	Years of Involvement in Organized Religion	None	000
			Less than 1	005
			1-2	015
			3-5	040
			5-10	075
			More than 10	100
40	RELIGION	Religious Affiliation	None	1
			Protestant	2
			Catholic	3
			Jewish	4
			Moslem	5
			Other (specify)	6
41	WORSER	Weekly Worship Service	no = 0, yes = 1	

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
42	SSCH	Sunday School Program	no = 0, yes = 1	
43	CATCLAS	Catechism Classes	no = 0, yes = 1	
44	YOUTHGR	Youth Organization or Activities	no = 0, yes = 1	
45	BSPMTG	Weekly Small Group, Study Session, or Prayer Meeting	no = 0, yes = 1	
46	CHCAMP	Church Camp	no = 0, yes = 1	
47	OTHER	Other (specify)	no = 0, yes = 1	
48	TOTRELAC	Total Number of Religious Activities	0-7	0-7
49	FATRELAC	Father's Religious Involvement	Not involved Occassionally active Active Very Active	1 2 3 4

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
50	MOTRELAC	Mother's Religious Involvement	Not involved	1
			Occassionally active	2
			Active	3
			Very active	4

TABLE 15 (Continued)

Columns	Variable Name	Variable Description	Levels	Code
IV. TEST RESULTS				
51-53	DIT	P Score on the Defining Issues Test (DIT)	0-95	000-095
54-56	EIT	P Score on the Environmental Issues Test (EIT)	0-95	000-095

APPENDIX B

Initial Contact Packet

Appendix B

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OSU

The Ohio State University

Division of
Environmental Education
2021 Coffey Road
Columbus, Ohio 43210
Phone 614 422-5589

Dear NAME OF ADMINISTRATOR:

As a graduate student at the Ohio State University, I am conducting research regarding the reasoning processes through which individuals make decisions regarding ethical dilemmas.

Based on curriculum, school size and location, NAME OF SCHOOL has been selected to participate in the study. The enclosed project summary provides details concerning the theoretical base and scope of the study. Please review it and return the enclosed response card by FRIDAY, JANUARY 29 regarding your participation in the study.

Your cooperation in this study is greatly appreciated. Public and proprietary schools which have thus far agreed to participate in the study have found the dilemmas in the test instruments useful for class discussion in their established curricula. It is hoped that the instruments and results will be equally valuable to you.

Please contact me with any questions regarding the study that might arise at 422-5589 or 294-0984.

Yours truly,

Deborah L. Bainer

School of Natural Resources

RESPONSE CARD

_____ Yes, our school will participate in your study.

_____ No, our school is not willing to participate in your study.

_____ I would like more information before reaching a decision regarding your study. Please call me as soon as possible. I can be reached at__________.

signed, ______________________

THANK YOU

Research Project Summary

AN APPLICATION OF KOHLBERG'S THEORY TO ENVIRONMENTAL ETHICS: THE INFLUENCE OF EDUCATIONAL PHILOSOPHY AND RELIGIOUS BACKGROUND ON THE DEVELOPMENT OF MORAL JUDGEMENT IN SELECTED COLUMBUS HIGH SCHOOL SENIORS

by Deborah L. Bainer

Introduction

For the past decade, the condition of the environment has been a major concern to this country's citizenry. In the 1960s, the thrust was to assess the damage already done to the land, water and air and in clean-up efforts. The 1970s brought environmental regulations to maintain environmental quality. The emphasis, however, is now shifting from the external to the internal as a solution to environmental deterioration.

With increasing frequency, environmental educators are calling for the teaching of an environmental ethic to solve the crisis. This does not involve indoctrination with a specific set of values--that stepping on bugs is bad, for example--but encouraging patterns of reasoning that lead to wise management decisions about environmental issues. An environmental ethic, they say, is a life philosophy or a way of making decisions about the environment.

Many factors have been suggested as influences on environmental ethics. The Judeo-Christian tradition is one. White and others assert that it has instilled an improper environmental ethic into Americans and is thus the cause of the environmental crisis. Conversely, Schaeffer maintains that a proper environmental ethic can only be based on the Judeo-Christian tradition.

The central issue addressed in this research concerns the influence of the school's educational philosophy and the individual's religious background on his/her ability to make moral decisions concerning the environment. An additional objective of the study is to determine if the development of moral judgement is general or context specific.

Related Research and Theory

Kohlberg's theory of the development of moral judgement holds that moral development follows a three-level progression from an egocentric through a societal to a universal perspective. Rather than "good" or "bad" behavior, morality is best explained, according to Kohlberg, in terms of the logical processes through which the individual conceives and resolves moral conflicts. The quality of an individual's moral judgement is not determined by the choice per se, but by the pattern of reasoning with which the individual justifies the choice.

Movement by the individual from one of Kohlberg's stages to the next is stimulated by confrontation with a moral dilemma through which the individual must reason. The rate at which the individual progresses through successive stages varies due to factors such as socioeconomic status and cultural background. In an educational setting, the transition is facilitated by a conscious effort to stimulate development in moral judgement in the overt and hidden curricula. School philosophy and atmosphere are important.

Iozzi, a proponent of Kohlberg's model, believes that the current environmental crisis stems from the fact that decisions and behaviors related to the environment are typical of the lower, self-oriented stages of Kohlberg's series. The cognitive developmental approach, he continues, could aid in "preparing students to deal both with our urgent environmental concerns and to instill an environmental ethic, which should result in more effective and environmentally sound decision-making."

Research Objectives

Application of Kohlberg's theory to the classroom should enable schools to produce citizens more able to make wise decisions about society in general and the environment more specifically. Further analysis of the potential, effectiveness and limitations of the theory, however are needed. This research project focuses on the influence of educational philosophy and religious background on the student's level of development of moral judgement.

Based on Kohlberg's theory that individuals progress through sequential stages in their moral thinking development, the study will:

1) identify the individual's level of moral judgement in general and in a specific environmental context;

2) determine whether or not a correlation exists between the school's religious philosophy and the individual's level of development of moral judgement in an environmental context;

3) determine whether or not religious background has an influence on the individual's level of development of moral judgement in an environmental context;

4) observe whether the development of moral judgement is general or context specific.

Methodology

The study involves twelfth grade students in six high schools (three public schools and three private schools) in the Columbus area. The public schools in this study have been selected on the basis of their proximity to a private Christian school. Location of the two schools within the same community will help to control extraneous variables such as residential origin and social class origin. Of the students tested in each school, those who have been in that respective system during and since grade 5 are of special interest, as this is recognized by Kohlberg as a period during which individuals are particularly impressionable. Private Christian schools have been selected on the basis of their integrated approach to curriculum and school philosophy.

Seniors in each school will be given two tests: the Defining Issues Test (DIT), to determine the level of moral judgement of the student, and the Environmental Issues Test (EIT), designed to measure moral and ethical judgement for moral issues set in an environmental context. Demographic information, including residential origin, religious background and educational history (see accompanying survey), will also be collected.

Both the DIT and EIT are based on Kohlberg's theory. Each taps the individual's preference for a particular mode of reasoning on moral issues. This is done by presenting moral dilemma stories similar to the one below. The student is asked to assign a priority rating to the 12 issue statements given, each of which is keyed to a specific moral reasoning stage. The student then selects and lists the four items most important to him/her in making a decision related to the dilemma.

The DIT consists of three stories and requires approximately 25 minutes to complete. The five-dilemma EIT should be completed in 45 minutes. All test and survey results will be kept strictly anonymous.

Information on the nature of the research project, instructions on how to administer the tests and uses of the test content and results in the classroom will be given to involved teachers and interested administrators at a 30-minute meeting prior to the testing date.

Testing will require two class periods on successive days. The DIT and demographic survey will be administered on one day, and the EIT on another day. Preferably, testing will occur within the established class structure. Senior classes to be tested should be selected at random. Generally, three to five class sections are required for testing, depending on the size of the senior class. All testing should be completed by Friday, February 26, 1982.

A multiple regression analysis of test results will provide theoretical insight into the processes associated with the formation of an environmental ethic in individuals. Application of the methodology used and results of the study should enable educators to identify the Kohlbergian stage of students and to thereby modify instructional approaches for maximum efficiency at each level.

APPENDIX C

Teacher Test Packet

Appendix C

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OSU

The Ohio State University

Division of Environmental Education
2021 Coffey Road
Columbus, Ohio 43210
Phone 614 422-5589

Dear Facilitator:

Thank you for your cooperation in participating in this study.

As noted in the project summary, the tests should be administered on two successive days between January 18 and February 26, 1982. Each test period will require 45 minutes. On the first test day, you should administer the TEST(s). On the second day, the TEST(s) should be given. Instructions for administering each test are attached to the test forms.

Please stress that students should NOT write their names on their test booklets or answer sheets. Student names should appear on the test packet envelope for the purposes of your identification ONLY. The envelope should be disgarded when testing is completed and only the test booklets and answer sheets returned to me. Anonymity will thus be retained.

If a student is absent for part or all of the regular test session, please allow him/her to complete the tests as soon as possible after the regular test period. Indicate on those answer sheets that the test was administered outside of the regular test session.

Answer sheets and tests will be collected from you as soon as possible after testing is completed. All testing should be completed by FRIDAY, FEBRUARY 26.

If you have any questions about the study, please contact me at 422-5589 or 294-0984.

Sincerely,

Deborah L. Bainer
Graduate Teaching Associate

School of Natural Resources

TEACHER INSTRUCTIONS

Day One:

1. Distribute a test packet to each student.

2. Make sure each student has a writing implement. Blue or black pen, pencil or flair may be used.

3. Tell the students to write their first and last names on the outside of the packet. THIS IS THE ONLY PLACE THAT THE STUDENT'S NAME SHOULD APPEAR.

4. Administer the (NAME OF TEST(s)). Follow the directions below to administer the test.

5. At the end of the test period, be sure that students have recorded their names on the test packets. Collect the packets.

Day Two:

1. Return the packets to the students. Proceed with the test to be administered this day, the (NAME OF TEST(s)). Follow the attached directions to administer this test.

2. At the end of the test period, have students remove the Student Survey, Defining Issues Test (DIT) and Environmental Issues Test (EIT) from their packets. Instruct students to attach the three forms together using the paper clip in their packet. Collect the test form bundle and discard the packet envelopes.

3. Test bundles will be picked up from you as soon as possible after testing is completed. A collection time will be confirmed by phone.

THANK YOU

INSTRUCTIONS FOR ADMINISTERING TESTS

STUDENT SURVEY

1. Have students remove the green/blue form from their packets that says STUDENT SURVEY at the top.

2. To begin the test, read the following directions to students:

> "In each of the categories listed on the survey, check the item that best applies to you. Check only one item in each section unless the question says to check more than one. If you are not sure about an answer, check the answer that you think is the best guess."

3. Ask students if they have any questions about what to do. If not, tell them to begin working on the test. Allow students 15 minutes to take the test, or whatever time is needed.

4. To end the test, read the following directions to students:

> "Check over your test form. Make sure you have checked a selection in each question. Make sure you have checked only one answer in each category except for questions 12, 13 and 17 where you are asked to check as many as apply.

Put your test back in your test packet."

DEFINING ISSUES TEST (DIT)

1. Have students remove the Defining Issues Test (DIT), the pink booklet, from their test packet.

2. Read the instructions and first page of the test booklet aloud while students read it to themselves:

> "OPINIONS ABOUT SOCIAL PROBLEMS: This questionnaire is used to learn how people think about social problems. Different

people often have different opinions about questions of right and wrong. Unlike math problems, there are no "right" answers to the questions presented here. In this questionnaire we would like you to give us your opinions about several problem stories.

Here is a story as an example. Read it, then turn to the next page.

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. On the next page there is a list of some of these questions. If you were Frank Jones, how important would each of these questions be in deciding what car to buy?

3. Continue reading as students turn to page 2 of the booklet:

"Now turn to the next page. On the left side of the page, darken the circle that indicated how important each of the questions is in helping you decide what car to buy."

4. Allow two minutes for students to complete the sample question in Part A.

5. Continue reading:

"Now look at Part B at the bottom of the page. From the list of questions above, select the one that is MOST important in helping you decide what car to buy. Put the number of the most important question on the top line below. Do the same for your second, third, and fourth most important choices."

6. Allow students two minutes to select their choices and fill in Part B. Then ask if there are any questions.

7. To begin the test, read the following to the students:

> "This booklet contains three stories. Read the first story in your booklet. At the bottom of the page, check the decision that you think should be made. Then turn to the next page and fill in the circle that best describes how important each question is to you in making your decision. List the four most important questions at the bottom of the page, just as you did in the sample.
>
> When you have finished the first story, go on to the second and third stories.
>
> Begin working."

8. This is NOT a timed test, however students should finish in about 25 minutes.

9. To end the test, read the following directions to students:

> "Check over your answer sheets. Make sure you have filled in only one circle for each question. Be sure you have listed the four questions most important to your decision at the bottom of the page for each of the stories.
>
> Return the test booklet to your packet."

ENVIRONMENTAL ISSUES TEST (EIT)

1. Have students remove the yellow Environmental Issues Test (EIT) from their packets.

2. To administer the test, follow the same instructions as for the DIT (see above items 2-7).

3. This is not a timed test, however students should finish in about 35 minutes.

4. To end the test, read the following directions to students:

"Check over your answer sheets. Make sure you have filled in only one circle for each question. Be sure you have listed the four questions most important to your decision at the bottom of the page for each of the stories.

Return the test booklet to your packet."

STUDENT SURVEY

Please complete the following questions. DO NOT SIGN YOUR NAME. All information will remain anonymous and confidential.

PART I: General Information

Check the information that applies to you in each category below.

1. **Age:**

_____15
_____16
_____17
_____18
_____19
_____Other (specify)_____

2. **Sex:**

_____Male
_____Female

3. **Race:**

_____American Indian or Alaskan Native
_____Asian
_____Hispanic
_____White (Not Hispanic)
_____Black (Not Hispanic)
_____Other (specify)________

4. **Total annual family income:**

_____Below $10,000
_____Between $10,000 and $20,000
_____Between $20,000 and $30,000
_____Between $30,000 and $40,000
_____Between $40,000 and $50,000
_____Over $50,000

5. **Type of Residence:**

_____Apartment
_____Condominium or townhouse
_____Individual house
_____Farm
_____Other (specify)_______________

6. **Size of property or yard:**

_____No yard
_____Less than 1/4 acre*
_____1/4 to 1 acre
_____1-5 acres
_____Over 5 acres

*An acre is about the size of a football field.

7. **Area of employment or occupation of father or male guardian:**

_____Business
_____Industry
_____Education
_____Government
_____Household Responsibilities
_____Religion
_____Citizen Action
_____Self employed
_____Not employed
_____Other (specify)___________________________

8. **Area of employment or occupation of mother or female guardian:**

_____Business
_____Industry
_____Education
_____Government
_____Household Responsibilities
_____Religion
_____Citizen Action
_____Self employed
_____Not employed
_____Other (specify)___________________________

PART II: Your Educational Background

Please provide the information requested below.

9. Present grade:

_____ 10
_____ 11
_____ 12

10. Number of years in PRESENT school system:

_____ 1-2
_____ 3-4
_____ 5-6
_____ 7-9
_____ 10-12

11. Course of study:

_____ College preparatory _____ General _____ Vocational/technical

12. Science classes you have completed or in which you are currently enrolled:

_____ Earth science
_____ General biology
_____ Advanced biology
_____ General chemistry
_____ Physics
_____ Other science courses (specify) ____________
_____ No science classes

13. Check the following environmentally related experiences in which you have participated:

_____ School camp or resident outdoor education program
_____ International Field Studies or similar field experience
_____ Youth Conservation Corps (YCC)
_____ Camp sponsored by a church, scouts, or 4-H
_____ Other (specify) ____________
_____ No environmentally related experience

PART III: Your Religious Background

Please complete the following questions about your religious background.

14. Which category best describes your religious involvement?

_____ Very active _____ Active _____ Occassionally active _____ not involved

15. Years of religious involvement:

_____ None
_____ Less than 1
_____ 1-2
_____ 3-5
_____ 5-10
_____ More than 10

16. Religion:

_____ None
_____ Protestant (specify) ____________
_____ Catholic
_____ Jewish
_____ Muslim
_____ Other (specify) ____________

17. In which religious activities are you involved?

_____ Weekly worship service
_____ Sunday school program
_____ Catechism classes
_____ Youth organization or activities
_____ Weekly small group, study session or prayer meeting
_____ Church camp
_____ Other (specify) ____________
_____ None

18. Which category best describes the religious involvement of the parent(s) or guardian(s) with whom you reside?

Father or male guardian:	Mother or female guardian:
_____Very active	_____Very Active
_____Active	_____Active
_____Occassionally involved	_____Occassionally involved
_____Not involved	_____Not involved

DEFINING ISSUES TEST
(DIT)

OPINIONS ABOUT SOCIAL PROBLEMS

This questionnaire is used to learn about how people think about social problems. Different people often have different opinions about questions of right and wrong. Unlike math problems, there are no "right" answers to the questions presented here. In this questionnaire we would like you to give us your opinions about several problem stories.

Here is a story as an example. Read it, then turn to the next page.

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. On the next page there is a list of some of these questions.

If you were Frank Jones, how important would each of these questions be in deciding what car to buy?

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PART A. (SAMPLE)

On the left hand side of the page, darken the circle that indicates the degree of importance of the question to be considered.

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
Ⓖ	Ⓜ	Ⓢ	Ⓛ	●	1. Whether the car dealer was on the same block where Frank lives.
●	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Would a used car be more economical in the long run than a new car?
Ⓖ	Ⓜ	●	Ⓛ	Ⓝ	3. Whether the color was green, Frank's favorite color.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	●	4. Whether the cubic inch displacement was at least 200.
●	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Would a large, roomy car be better than a compact car?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	●	6. Whether the front connibilies were differential.

PART B. (SAMPLE)

From the list of questions above, select the most important one of the whole group. Put the number of the most important question on the top line below. Do likewise for your 2nd, 3rd, and 4th most important choices.

MOST Important 5

SECOND Most Important 2

THIRD Most Important 3

FOURTH Most Important 1

HEINZ AND THE DRUG

In Europe a woman was near death from a special kind of cancer. There was one drug that doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1,000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and began to think about breaking into the man's store to steal the drug for his wife.

Should Heinz steal the drug? (Check one)

_____Should steal it

_____Can't decide

_____Should not steal it

DIT ANSWER SHEET

HEINZ AND THE DRUG

IF YOU WERE THE SICK WOMAN'S HUSBAND, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT TO STEAL THE DRUG?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.	
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1. Whether a community's laws are going to be upheld.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Isn't it only natural for a loving husband to care so much for his wife that he'd steal?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4. Whether Heinz is a professional wrestler, or has considerable influence with professional wrestlers.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Whether Heinz is stealing for himself or doing this solely to help someone else.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6. Whether the druggist's rights to his invention have to be respected.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8. What values are going to be the basis for governing how people act towards each other.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects the rich anyhow.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10. Whether the law in this case is getting in the way of the most basic claim of any member of society.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11. Whether the druggist deserves to be robbed for being so greedy and cruel.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12. Would stealing in such a case bring about more total good for the whole society or not.

From the questions above, select the four most important:

Most Important ____
Second Most Important ____
Third Most Important ____
Fourth Most Important ____

NEWSPAPER

Fred, a senior in high school, wanted to publish a mimeographed newspaper for students so that he could express many of his opinions. He wanted to speak out against the war in Viet Nam and to speak out against some of the school's rules, like the rule forbidding boys to wear long hair.

When Fred started his newspaper, he asked his principal for permission. The principal said it would be all right if before every publication Fred would turn in all his articles for the principal's approval. Fred agreed and turned in several articles for approval. The principal approved all of them and Fred published two issues of the paper in the next two weeks.

But the principal had not expected that Fred's newspaper would receive so much attention. Students were so excited by the paper that they began to organize protests against the hair regulation and other school rules. Angry parents objected to Fred's opinions. They phoned the principal telling him that the newspaper was unpatriotic and should not be published. As a result of the rising excitement, the principal ordered Fred to stop publishing. He gave as a reason that Fred's activities were disruptive to the operation of the school.

Should the principal stop the newspaper? (Check one)

_____Should stop it

_____Can't decide

_____Should not stop it

2

NEWSPAPER

IF YOU WERE THE PRINCIPAL, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT YOU WOULD STOP THE NEWSPAPER?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.		
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1.	Is the principal more responsible to students or to parents?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2.	Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3.	Would the students start protesting even more if the principal stopped the newspaper?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4.	When the welfare of the school is threatened, does the principal have the right to give orders to the students?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5.	Does the principal have the freedom of speech to say "no" in this case?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6.	If the principal stopped the newspaper would he be preventing full discussion of important problems?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7.	Whether the principal's order would make Fred lose faith in the principal.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8.	Whether Fred was really loyal to his school and his community.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9.	What effect would stopping the paper have on the students' education in critical thinking and judgment?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10.	Whether Fred was in any way violating the rights of others in publishing his own opinions.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11.	Whether the principal should be influenced by some angry parents and citizens when it is the principal who knows best what is going on in the school.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12.	Whether Fred was using the newspaper to stir up hatred and discontent.

From the questions above, select the four most important:

Most Important ____
Second Most Important ____
Third Most Important ____
Fourth Most Important ____

ESCAPED PRISONER

A man had been sentenced to prison for 10 years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Thompson. For 8 years he worked hard, and gradually he saved enough money to buy his own business. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day, Mrs. Jones, an old neighbor, recognized him as the man who had escaped from prison 8 years before, and whom the police had been looking for.

Should Mrs. Jones report Mr. Thompson to the police and have him sent back to prison? (Check one)

_____Should report him

_____Can't decide

_____Should not report him

ESCAPED PRISONER

IF YOU WERE MRS. JONES, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT TO REPORT MR. THOMPSON?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.	
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1. Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Everytime someone escapes punishment for a crime, doesn't that just encourage more crime?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3. Wouldn't we be better off without prisons and the oppression of our legal systems?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4. Has Mr. Thompson really paid his debt to society?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Would society be failing what Mr. Thompson should fairly expect?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6. What benefits would prisons be apart from society, especially for a charitable man?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8. Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was let off?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9. Was Mrs. Jones a good friend of Mr. Thompson?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10. Wouldn't it be a citizen's duty to report an escaped criminal, regardless of the circumstances?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11. How would the will of the people and the public good best be served?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12. Would going to prison do any good for Mr. Thompson or protect anybody?

From the questions above, select the four most important:

Most Important ____

Second Most Important ____

Third Most Important ____

Fourth Most Important ____

ENVIRONMENTAL ISSUES TEST
(EIT)

OPINIONS ABOUT SOCIAL PROBLEMS

This questionnaire is used to learn about how people think about social problems. Different people often have different opinions about questions of right and wrong. Unlike math problems, there are no "right" answers to the questions presented here. In this questionnaire we would like you to give us your opinions about several problem stories.

Here is a story as an example. Read it, then turn to the next page.

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. On the next page there is a list of some of these questions.

If you were Frank Jones, how important would each of these questions be in deciding what car to buy?

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PART A. (SAMPLE)

On the left hand side of the page, darken the circle that indicates the degree of importance of the question to be considered.

GREAT importance	MUCH importance	SOME importance	LITTLE importance	NO importance	
Ⓒ	Ⓜ	Ⓢ	Ⓛ	●	1. Whether the car dealer was on the same block where Frank lives.
●	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Would a used car be more economical in the long run than a new car?
Ⓒ	Ⓜ	●	Ⓛ	Ⓝ	3. Whether the color was green, Frank's favorite color.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	●	4. Whether the cubic inch displacement was at least 200.
●	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Would a large, roomy car be better than a compact car?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	●	6. Whether the front connibilies were differential.

PART B. (SAMPLE)

From the list of questions above, select the most important one of the whole group. Put the number of the most important question on the top line below. Do likewise for your 2nd, 3rd, and 4th most important choices.

MOST Important 5

SECOND Most Important 2

THIRD Most Important 3

FOURTH Most Important 1

ELECTRICITY

Southern Electric Company bought a large piece of land in the Southwest from an Indian tribe. The land was purchased to build six large coal burning generators. The electricity produced by these stations was to be sent to several large cities in southern California. This land was chosen because it contained great amounts of coal that would be burned to produce power. It was also close enough to California so that power could be transmitted easily and cheaply.

Two generating stations were built. After they were put into operation, a group of young Indians met with the power company and the government. They complained about the great amount of smoke produced by the generators. They said the smoke was blackening the skies and endangering the lives of everyone for hundreds of miles. They were also angered because mining the coal was scarring the landscape and destroying sacred Indian grounds. They said the older Indian leaders who sold the land didn't really understand how the land was to be used. They also felt that they were forced into an unfair agreement. The Indians demanded that the power stations be closed and the land returned.

The power company refused. The company said it was their land and they could do what they wanted with it. The government said that the sale was legal and that nothing could be done about it. The Indians became desperate and began to make plans to blow up the power station. They felt that this would force the company to close.

Should the Indians blow up the power stations?

_____Yes, they should blow up the stations.

_____Can't decide

_____No, they should not blow up the stations.

EIT ANSWER SHEET

ELECTRICITY

IF YOU WERE ONE OF THE INDIANS, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT THE POWER STATIONS SHOULD BE BLOWN UP?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.	
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1. Whether laws are going to be upheld.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Isn't it only natural for Indians to care so much for their land and their people that they would blow up the power stations?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3. Are the Indians willing to risk getting shot or going to jail for the chance that blowing up the power stations might help?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4. Whether the Indians are professional wrestlers, or have considerable influence with professional wrestlers.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Whether the Indians are blowing up the power stations for themselves or doing this solely to help others.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6. Whether the power company's rights or ownership have to be respected.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8. What values are going to be the basis for governing how people act towards each other.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9. Whether the power company is going to be allowed to hide behind a worthless law which only protects the rich anyhow.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10. Whether the law in this case is getting in the way of the most basic claim of any member of society.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11. Whether the power company deserves to be blown up for being so greedy and cruel.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12. Would blowing up the power company in such a case bring about more total good for the whole society or not?

From the list of questions above, select the four most important:

Most Important ___
Second Most Important ___
Third Most Important ___
Fourth Most Important ___

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STARVING NATION

Ruvaria, a small overpopulated and unfriendly nation, was faced with the great problem of finding more food for its starving people. In fact, living and health conditions became so bad that many people were dying. Others were suffering so much that they wanted to die. Most of the deaths involved babies, young children and the elderly.

A group of Americans became very concerned about Ruvaria's problems. They asked the President of the United States to help the Ruvarians and give them the needed food. However, the President realized that if he gave Ruvaria the food it would serve to keep the population excessively high and might even cause a population boom. Then, when the food is gone, the people of Ruvaria will again be faced with the same problems.

On the other hand, if the President didn't supply the food, many people would die. But, in the long run, this would greatly reduce Ruvaria's population. With a much smaller population Ruvaria would be able to support itself and allow its people to live fuller, more comfortable and healthier lives.

Should the President give the food to Ruvaria?

_____Yes, he should give the food to Ruvaria.

_____Can't decide

_____No, he should not give the food to Ruvaria.

STARVING NATION

IF YOU WERE THE PRESIDENT, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT THE FOOD SHOULD BE GIVEN TO RUVARIA?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.	
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1. Whether the starving and overpopulated country is in favor of getting the food from the United States.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Is the President of the United States obligated by international law since not giving the food to the starving nation would be the same as killing thousands of people?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3. Whether people would be much better off without society regimenting their lives and even their deaths.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4. Whether the President of the United States ignores the request and makes it appear as though he was never informed of the problem.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Does the state have the right to force some people to die and others to live against their will?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6. What is the value of death prior to society's perspective on personal values?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7. Whether the President has sympathy for the people suffering or cares more about what society might think.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8. Will raising the standard of living of the surviving Ruvarians justify the loss of human life?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9. Whether only God should decide when a person's life should end.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10. What values the President has set for himself in his own personal code of behavior.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11. Does International Law justify raising the standard of living for future generations at the expense of the present generation by withholding aid?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12. Will withholding aid in this situation set a precedent for future actions that may be motivated only by greed?

From the list of questions above, select the four most important:

Most Important ___
Second Most Important ___
Third Most Important ___
Fourth Most Important ___

CONCERNED CITIZENS

Mr. Peters was greatly concerned about the fact that several paper mills in the area were polluting the streams and rivers in his state. The state's drinking water was being poisoned, and great numbers of fish were being killed daily.

For more than a year, Mr. Peters had tried to get state officials to do something about the problem. All of his efforts were unsuccessful. He felt, however, that if all of the town's citizens were made aware of the problem many of them would assist him in forcing the government to take action. He printed at his own expense several thousand leaflets explaining the water pollution problem. Mr. Peters then had thousands of leaflets dropped from a helicopter to local shopping centers and business areas in the town.

Mrs. Jones noticed that the leaflets littered many parts of town. She also knew that the town had a very strict anti-litter ordinance which carried very harsh penalties--including prison sentences. Mrs. Jones felt that Mr. Peters was breaking the law.

Should Mrs. Jones report Mr. Peters to the police?

_____She should report him.

_____Can't decide

_____She should not report him.

CONCERNED CITIZENS

IF YOU WERE MRS. JONES, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDINC WHETHER OR NOT YOU WOULD REPORT MR. PETERS TO THE POLICE?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.		
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1.	Isn't the work that Mr. Peters is doing enough to prove that he isn't a bad person?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2.	Every time someone escapes punishment for a crime, doesn't that just encourage more crime?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3.	Wouldn't we be better off without prisons and the oppression of our legal system?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4.	Is Mr. Peters paying a debt to society?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5.	Whether society is failing to do something that Mr. Peters has a right to expect.
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6.	What benefit would prisons and penalties be, apart from society, especially for a charitable man?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7.	How could anyone be so cruel and heartless as to send Mr. Peters to prison?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8.	Would it be fair to all other people who have broken the anti-litter law and who were punished if Mr. Peters was let off?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9.	Was Mr. Peters a good friend of Mrs. Jones?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10.	Wouldn't it be a citizen's duty to report a lawbreaker, regardless of the circumstances?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11.	How would the will of the people and the public good best be served?
Ⓒ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12.	Would being fined and possibly going to prison do any good for Mr. Peters or protect anybody?

From the list of questions above, select the four most important:

Most Important ____

Second Most Important ____

Third Most Important ____

Fourth Most Important ____

NEWSPAPER

Fred, a senior in high school, wanted to publish a mimeographed newspaper for students so that he could express many of his opinions. He wanted to speak out against pollution and environmental problems of all kinds.

When Fred was starting his newspaper, he asked his principal for permission. The principal said it would be all right if before every publication Fred would turn in all his articles for the principal's approval. Fred agreed and turned in several articles for approval. The principal approved all of them and Fred published two issues of the paper in the next two weeks.

But the principal had not expected that Fred's newspaper would receive so much attention. Students were so excited by the paper that they began to organize protests and boycotts against industries and stores in town. Angry parents, many who worked in the factories and stores being attacked by the paper, objected to Fred's opinions. Merchants and factory officials also voiced strong protests against the paper. They phoned the principal telling him that the paper should not be published. As a result of the rising excitement, the principal ordered Fred to stop publishing. He gave as a reason the fact that Fred's activities were disruptive to the operation of the school.

Should the principal stop the newspaper?

____Should stop it.

____Can't decide

____Should not stop it.

NEWSPAPER

IF YOU WERE THE PRINCIPAL, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT YOU WOULD STOP THE NEWSPAPER?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.	
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1. Is the principal more responsible to students or to parents?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3. Would the students start protesting even more if the principal stopped the newspaper?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4. When the welfare of the school is threatened, does the principal have the right to give orders to the students?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Does the principal have the freedom of speech to say "no" in this case?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6. If the principal stopped the newspaper would he be preventing full discussion of important problems?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7. Whether the principal's order would make Fred lose faith in the principal.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8. Whether Fred was really loyal to his school and his community.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9. What effect would stopping the paper have on the students' education in critical thinking and judgment?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10. Whether Fred was in any way violating the rights of others in publishing his own opinions.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11. Whether the principal should be influenced by some angry parents and citizens when it is the principal who knows best what is going on in the school.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12. Whether Fred was using the newspaper to stir up hatred and discontent.

From the questions above, select the four most important:

Most Important ____

Second Most Important ____

Third Most Important ____

Fourth Most Important ____

Environmental Strike

The heating plant and incinerator at Central High School are very old. Each time they are used large amounts of smoke and air pollutants are produced. The faculty at Central High is very concerned about pollution and the environment. They feel that this pollution is harmful to the health of their students and everyone in the community. The faculty demanded that the Board of Education do something to stop this pollution.

At the next meeting of the Board of Education, the Superintendent of schools informed the board of the faculty demands. However, the board felt that air pollution was not a serious matter. The board also said that this was not a faculty problem and refused their demands.

When word of the board's decision got back to the faculty, the teachers became quite upset. A vote was taken and the faculty went on strike and refused to let anyone enter the school building. The teachers knew that striking was illegal but they also felt that this action was necessary to protect the environment.

Should the teachers have gone on strike?

____ Yes, they should go on strike

____ Can't decide

____ No, they should not go on strike

ENVIRONMENTAL STRIKE

IF YOU WERE A MEMBER OF THE FACULTY, HOW IMPORTANT WOULD EACH OF THESE QUESTIONS BE IN DECIDING WHETHER OR NOT YOU SHOULD GO ON STRIKE?

GREAT Imp.	MUCH Imp.	SOME Imp.	LITTLE Imp.	NO Imp.	
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	1. Is the faculty doing this to really help the environment or are they doing it just for kicks?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	2. Does the faculty have any right to take over property that does not belong to them?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	3. Do the faculty realize that they might be arrested and fined, and even lose their jobs?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	4. Would striking in the long run benefit more people to a greater extent?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	5. Whether the board of education stayed within the limits of its authority in ignoring the faculty demands.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	6. Will this strike anger the public and give all environmentalists and teachers a bad name,
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	7. Is striking consistent with principles of justice?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	8. Would allowing one strike encourage many other teacher strikes?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	9. Did the board bring this misunderstanding on themselves by being so unreasonable and uncooperative?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	10. Whether operating the schools ought to be in the hands of a few administrators or in the hands of all the people.
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	11. Is the faculty following principles which they believe are above the law?
Ⓖ	Ⓜ	Ⓢ	Ⓛ	Ⓝ	12. Whether or not the board of education's decisions should be respected by the faculty.

From the questions above, select the four most important:

Most Important ______

Second Most Important ______

Third Most Important ______

Fourth Most Important ______

APPENDIX D

Calculation of P Scores

Appendix D

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Calculation of the EIT P Score. 180

Calculation of the DIT P Score

1) A data sheet (Figure 3) was prepared for each student (Rest, 1974b).

Story Item	1	2	3	4	5	6	7	8	9	10	11	12
Heinz	4	3	2	M	3	4	M	6	A	5A	3	5A
Escaped Prisoner	3	4	A	4	6	M	3	4	3	4	5A	5A
Newspaper	4	4	2	4	M	5A	3	3	5B	5A	4	3

FIGURE 3

Defining Issues Test (DIT) Scoring Sheet

2) The four rankings of dilemma questions at the bottom of each test page were recorded.

3) The choices were weighted. The first choice was given a weight of 4, the second choice a weight of 3, the third choice a weight of 2, and the fourth choice a weight of 1.

4) The weighted value of the questions ranked as most important were entered on the scoring key under the appropriate story question. For example, if a student listed question 6 as the first choice on the Heinz dilemma, the weighted value 4 was written in the column under tiem 6 across the Heinz story.

5) The completed table had twelve entries; four each for

the Heinz, Prisoner and Newspaper stories.

6) The number printed in each box of the scoring sheet indicated the stage assigned to that question. The weighted responses for stages 5A, 5B and 6 were added to give a subtotal for each student. This subtotal was the Principled Morality Score (P Score), or the relative importance attributed to principled moral considerations by the student.

7) To change the P Score to a percent, the formula was used:

$$\text{P Score} = \frac{5A + 5B + 6}{\text{no. of stories} \times 10} \times 100$$

The subtotal (from step 6) was the numerator of the equation and three, the number of stories in the short form, was the denominator.

Calculation of the EIT P Score

1) A data sheet (Figure 4) was prepared for each student. (Iozzi, 1981).

Story Item	1	2	3	4	5	6	7	8	9	10	11	12
Electricity	4	3	2	M	3	4	M	6	A	5A	3	5A
Env. Strike	3	3	2	5A	5A	3	6	4	3	A	5B	4
Starv. Nation	3	4	A	2	5A	M	3	6	4	5B	4	5A
Newspaper	4	4	2	4	M	5A	3	3	5B	5A	4	3
Concerned Cit.	3	4	A	4	6	M	3	4	3	4	5A	5A

FIGURE 4

Environmental Issues Test (EIT) Scoring Sheet

2) The four rankings of dilemma questions at the bottom of each test page were recorded.

3) The choices were weighted. The first choice was given a weight of 4, the second choice a weight of 3, the second choice a weight of 2, and the fourth choice a weight of 1.

4) The weighted value of the questions ranked as most important were entered on the scoring key under the appropriate story question. For example, if a student listed question 10 as the first choice on the Environmental Strike story, the weighted value of 4 was recorded under column 10 across from

strike story.

5) The completed table had twenty entries, four for each of the five stories.

6) The number printed in each box of the scoring sheet indicated the stage assigned to that question. The weighted responses for stages 5A, 5B and 6 were added to give a subtotal. This subtotal was the Principled Morality Score (P Score), or the relative importance attributed to principled moral considerations by the student.

7) To change the P Score to a percent, the formula was used:

$$\text{P Score} = \frac{5A + 5B + 6}{\text{no. of stories X 10}} \text{ X } 100$$

The subtotal (from step 6) was the numerator of the equation and five, the number of stories in the EIT, was the denominator.